

## **APPENDIX OF STANDARD DRAWINGS FOR PIPELINE CONSTRUCTION**

Title Page  
Project Identification Sign  
Methods for Installing and Restoring Polyethylene Wrap  
Typical Utility Locations  
Typical Cast-in-Place Thrust Anchors  
Common Backfill and Lawn Restoration  
City of Louisville Backfill and Paving Restoration  
Jefferson County Backfill and Paving Restoration  
State of Kentucky Backfill and Paving Restoration  
Sidewalk/Backfill Detail  
Traffic Control Devices  
Creek Crossings With Concrete Cap  
Typical 1" Manual Air Valve (For mains up to 16")  
Typical Combined 2" Automatic and Manual Air Valve (For mains 20" and larger)  
Typical 2" Flushing Connection  
Typical Fire Hydrant Installation  
(Material Listing for) Typical Copper Service Installation 1" and Smaller  
(Drawing for) Typical Short Copper Service 1" and Smaller  
(Drawing for) Typical Long Copper Service 1" and Smaller  
(Material Listing for) Typical 3/4" Copper Service With Pressure Reducing Valve  
(Drawing for) Typical 3/4" Copper Service With Pressure Reducing Valve  
(Material Listing for) Typical 1" Copper Service With Pressure Reducing Valve  
(Drawing for) Typical 1" Copper Service With Pressure Reducing Valve  
(Material Listing for) Typical Double Domestic/Irrigation 1" Copper Service  
(Drawing for) Typical Double 1" Domestic/Irrigation Copper Service  
(Material Listing for) Typical Double Domestic/Irrigation 1" Copper Service With  
    Pressure Reducing Valve  
(Drawing for) Typical Double 1" Domestic/Irrigation Copper Service with Pressure  
Reducing Valve  
(Material Listing for) Typical 1-1/2" or 2" Copper Service  
(Drawing for ) Typical 1-1/2" or 2" Copper Service  
(Material Listing for) Typical 1-1/2" or 2" Copper Service With Pressure Reducing Valve  
(Drawing for) Typical 1-1/2" or 2" Copper Service With Pressure Reducing Valve  
(Material Listing for) Typical Ductile Iron Domestic Service 4" and Larger  
(Drawing for) Typical Ductile Iron Domestic Service 4" and Larger  
(Material Listing for) Typical Fire Protection Service 4" and Larger  
(Drawing for) Typical Fire Protection Service 4" and Larger  
(Material Listing for) Typical Temporary Service From Fire Hydrant  
(Drawing for) Typical Temporary Service From Fire Hydrant (3/4" or 1-1/2")

## ARTICLES OF AGREEMENT

This **PROJECT CONTRACT**, made and entered into by and between the Louisville Water Company, a corporation existing under and by virtue of the laws of the Commonwealth of Kentucky acting through the agency of the Board of Water Works for and in behalf of the City of Louisville, hereinafter called "Company", and \_\_\_\_\_, hereinafter called "Contractor".

**WITNESSETH:** The above-listed parties, for and in consideration of the premises contained herein below, covenant and agree as follows:

1. Contract Documents All work shall be performed and all materials shall be furnished in strict compliance with this Contract between the Company and the Contractor, in which the Contract shall include all of the following Contract Documents incorporated herein as if fully set out:

- Advertisement for Bid
- Instructions To Bidders
- Kentucky Prevailing Wage Determination (if furnished)
- Federal General Wage Decision (if furnished)
- Bidder's Proposal form (Company-supplied)
- Bid Bond (by bidder, if specified by Company)
- Non-Collusion Affidavit form (Company-supplied)
- Certificate of Insurance (bidder-supplied, if approved by the Company)
- List of Materials/Equipment (bidder-supplied, if specified)
- Louisville Water Company Minority and Women Business Enterprise Program Requirements (Company-supplied)
- Subcontractor Utilization Payment Report form (Company supplied)
- Articles of Agreement
- Performance Bond form (if specified)
- Payment Bond form (if specified)
- EEO Documentation
- Release of Lien form (Company-supplied)
- Addenda (if issued)
- Minutes of Mandatory Pre-bid Meetings (if specified)
- Supplementary Specifications (if furnished)
- Technical Specifications, with Appendix of Drawings
- Project Drawings (Company-supplied)
- Project Drawings (bidder-supplied, if requested and approved by the Company)

Statements contained in the TECHNICAL SPECIFICATIONS that conflict with statements contained in other Company-produced documents shall be superseded by those statements contained in the other Company-produced documents.

The Project Contract shall include other documents only if and when such other documents are incorporated by reference to same in one or more of the above-listed documents, or if the parties agree in writing to add such other documents, by way of attachment. No modification or change of terms of this Contract shall bind either party unless in writing signed by both parties, and then such waiver, consent, modification, or change shall be effective only in the specific instance and for the specific purpose given. There are no understandings, agreements, representations, or warranties, express or implied, not specified herein regarding this Contract. Any terms and/or conditions of any document submitted by the successful bidder in connection with this Contract which are in addition to and/or inconsistent with the terms and/or conditions of the above-listed Company-produced Contract Documents shall not be binding on the Company and shall not apply to this Contract.

2. Compliance with Specifications and Project Drawings All material, services, and equipment furnished by the successful bidder as Contractor shall be in conformity with all of the contract-related specifications and drawings and Contract Documents as listed in Article 1, of the **ARTICLES OF AGREEMENT**, and shall be subject to inspection and approval by the Company. Specifications and drawings are intended to be cooperative; where material/services/equipment is called for in one and not the other, it shall be furnished/performed as though called for in both.
3. Amendment/Waiver of Specifications The Company reserves the right to amend the specifications and/or waive compliance of any material and/or service with any particular specification, where such waiver is considered to be in the Company's best interest, including, but not limited to, cases where such waiver is necessary due to technical errors or inconsistencies in preparation of such specifications. Any waiver of compliance with material and/or services shall be validated in writing by the Company.
4. Site Examination The submission of a bid by the Contractor is its acknowledgment that it has made a thorough examination of the site and has become familiar with local conditions affecting the work. Failure to make such an examination shall not result in any liability to the Company and shall not result in a claim for extras.
5. Compliance with Laws The submission of a bid by the Contractor is its acknowledgment that it is familiar with and agrees to comply with the following:
  - 5.a. The provisions of all applicable federal, state, and local laws, statutes, ordinances, orders, rules and regulations, including, but not limited to, the requirements of the City of Louisville, the Counties of Bullitt, Jefferson, and Oldham, the Commonwealth of Kentucky, the Air Pollution Control District of Jefferson County, the Kentucky Division of Water regulations (including those pertaining to erosion and sediment control requirements as administered by the Louisville and Jefferson County Metropolitan Sewer District), and the

regulations of the Kentucky Natural Resources and Environmental Protection Cabinet.

- 5.b. Applicable safety standards and regulations established by the Kentucky Labor Cabinet, pursuant to Chapter 338 of the Kentucky Revised Statutes, and all other applicable safety statutes, as well as related standards and regulations set forth by the United States Government and its agencies. The successful bidder or "Contractor" is expected to comply with all existing standards and regulations to insure that a safe place of employment is created in connection with the performance of the Contract.
6. Typical Work Hours Unless otherwise noted in the **BIDDER'S PROPOSAL** form, **TECHNICAL SPECIFICATIONS**, and/or the **SUPPLEMENTARY SPECIFICATIONS**, the Contractor shall schedule its work so as not to exceed the typical eight-hour day-time work shift of Monday through Friday. A four ten-hour-a-day work week is subject to the approval of the Company. Also, typically, the following days shall be observed as no-work days: New Year's Day, Martin Luther King Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day after Thanksgiving, Christmas Eve, and Christmas Day. Any deviation from the above-mentioned dates, days and/or times-of-days must be approved beforehand by the Company.
7. Kentucky/Federal Wage Scales If furnished by the Company (i.e., if included in the project's booklet of Contract Documents), the Kentucky Prevailing Wage Determination and the Federal General Wage Decision shall be applicable. The Company shall proclaim a project as a to-be prevailing wage contract: (1) if the Company's contract estimate ("contract estimate" is the Company's definition of the summation of the Contractor's materials, labor, and equipment costs as estimated by the Project Manager), at the time of project advertisement and/or at the time an addendum states a change in the scope of work, exceeds \$250,000 (which is the threshold set by Kentucky's KRS 337.505-550); and/or (2) if required by the Davis-Bacon Act or related Act(s) in the event Federal funding is involved in the project. The Contractor shall be required to post and to pay the applicable Prevailing Wage Determination/ Decision as set forth by the governing authority. In the event both the State and the Federal Prevailing Wage Determination/ Decision are applicable, then the Contractor shall pay the higher of the two wages for each pertinent job classification.
8. Bonds Unless otherwise stated in the **ADVERTISEMENT TO BID**, the **BIDDER'S PROPOSAL** form, and/or the **SUPPLEMENTARY SPECIFICATIONS**, the Contractor shall furnish, through an agent licensed in the State of Kentucky:
- 8.a. A Performance Bond satisfactory to the Company covering the full amount of the contract including a one year warranty period from the time the work is accepted as complete and in regards to defective workmanship and/or materials; and

- 8.b. A Payment Bond satisfactory to the Company covering the full amount of payment for all labor, equipment, and materials in the contract.

Insurance and Surety firms will be qualified and acceptable to the Company in connection with contractor bonding and insurance requirements only if said firms have a policy holder's rating of A, a financial rating of not less than XII, and a customer surplus of not less than \$25,000,000.00, all as shown under Best's Key Rating Guide, latest edition, provided however, that such firms are licensed in the State of Kentucky.

9. Insurance Prior to execution of this contract, the Contractor agrees to procure and/or maintain and cause its subcontractors to procure and/or maintain insurance coverage as set out in the following sub-paragraphs so as to protect the Company and/or its agents and employees from all claims for damages and costs due to property damage, personal injury, bodily injury and/or death resulting from or attributed to the acts or omissions of the Contractor, its employees, agents, subcontractors, and suppliers. In addition, the Contractor shall procure and maintain all other types of insurance coverage as may be required by statute, ordinance, and/or government regulation. Failure to maintain the required insurance during the term of this contract will result in an order to stop work (with no additional time added to the contract period) and may result in termination of this contract.

The Company will not execute this contract until the Contractor has obtained all insurance coverage's as described in the following sub-paragraphs and evidence of such insurance coverage's has been provided to and approved by the Company.

The Company shall be named as an additional insured on all liability insurance policies as described in the following sub-paragraphs and evidence of same shall be provided by a certificate of insurance from the carrier or broker. However, at its discretion, the Company may, in advance of any work being done hereunder, modify or waive any or all of these requirements. Following is a listing of those insurance coverage's which must be procured and maintained in order to meet the requirements of this Contract:

- 9.a. Worker's Compensation Insurance coverage for all persons involved in work under this Contract, whether employees of the Contractor or subcontractors. Coverage shall include employees employers liability with a limit of at least \$500,000. If applicable, such insurance shall include coverage's under the Jones Act and the Longshoremen and Harbor Workers Act with limits of at least \$500,000.
- 9.b. General Liability Insurance, including owners and contractors protection for the acts of its subcontractors, and including completed operations, products, blanket contractual and underground and collapse coverage's with limits of at least \$1,000,000 per occurrence and in the aggregate for personal injury and/or bodily injury and property damage. If blasting is done under this Contract,

blasting and explosion perils are to be included with limits of at least \$2,000,000 and coverage shall comply with all applicable conditions of the Motor Carrier Act of 1980 including any limits of insurance in excess of those limits stated in these project specifications. When the proposed contract work involves operations near or upon the property of any railroad, Contractor shall also provide coverage for that exposure with limits of at least \$3,000,000 for personal injury, bodily injury, or property damage per occurrence with an aggregate limit of \$6,000,000.

- 9.c. Automobile Liability Insurance, including blanket contractual coverage with limit at least \$1,000,000 per occurrence and in the aggregate for bodily injury and property damage.
  - 9.d. Property Insurance will be maintained by the Contractor on its own property including equipment and property involved in this contract, delivered to the jobsite and premises adjacent thereto. Full replacement cost coverage will be carried on an "all-risk" form with such deductible features as is satisfactory to the Company.
10. Pipe and Pipe Appurtenances Furnished by the Company All specified PVC pipe, ductile iron pipe, valves, fittings, gaskets, fire hydrants, polyethylene wrap, and steel casing pipe will be furnished by the Company, unless otherwise noted in the SUPPLEMENTARY SPECIFICATIONS, without charge (except for improper handling) at its Allmond Avenue warehouse and storage yard. Heavy materials requiring mechanical lifting assistance will be loaded onto the Contractor's truck by Company personnel. Lightweight materials such polyethylene wrap and gaskets will be delivered to the Contractor at the loading dock. The Contractor shall be responsible for the placement of all materials on their vehicle as well as properly securing all material. While on the Allmond Avenue premises, Contractor personnel must wear hard hats and safety shoes at all times and observe all other Company safety and operational rules and directions. The Contractor agrees that during warehouse and storage yard visits:
- 10.a. the Company is not responsible for damage to vehicles arising from the usual and customary loading and unloading procedures.
  - 10.b. the Company is not responsible for damage to Company-supplied material or to vehicles or for injury to any person resulting from the use by the Contractor or its agents of inadequate or inappropriate vehicles.
  - 10.c. the Company is not responsible for damage to Company-supplied material or to vehicles or for injury to any person resulting from Contractor-requested loading and unloading procedures or arising when the harmful activity is under the direction of non-Company personnel.

- 10.d. the Company reserves the right to refuse loading materials onto vehicles deemed inappropriate.
- 10.e. all 4" x 4" timbers used in loading and unloading pipe remain the property of the Company and are to be returned to the Allmond Avenue Warehouse. All returned pipe shall be elevated on 4" x 4" timbers for proper unloading.
11. Supplementary Drawings and Specifications The Company's Project Manager shall furnish the Contractor such supplementary drawings or specifications as may be necessary to detail or illustrate the work to be done, and the Contractor shall conform to the same as part of his/her contract so far as they may be consistent with the original drawings and specifications referred to and identified in Article 1. All drawings and specifications are, and shall remain, the property of the Company.
12. Payments/Retainage It is mutually agreed that the Contractor shall receive, as full compensation for the herein described work, a lump sum as indicated on the **BIDDER'S PROPOSAL** form.

The Company reserves the right to specify the content and format of invoices submitted for payment.

Subject to any outstanding liens, payments for 90 percent of the value of the work completed (10 percent retained), shall be made to the Contractor within 30 days of invoice being certified by the Project Manager. The final payment shall be made to the Contractor upon: final accounting for materials issued under this contract; receipt of Contractor's lien release; and release of all third party liens or claims filed with the Company; or upon 60 days after completion and final acceptance, whichever shall occur last.

PAYMENT	WHEN	AMOUNT
Progress	Within 30 days of Project Manager Certification	90% of Value of Work Completed
Retainage	Upon final accounting of materials, lien release, or upon 60 days after completion of project, whichever comes last.	10% of Value of Contract

If required under KRS 371.160, retainage will be deposited in a joint Company - Contractor interest-bearing retainage escrow account.

13. Payments Not Evidence of Performance It is mutually agreed: that no payment issued under this contract, except final payment, shall be evidence of completion of the contract either wholly or in part; and that no payment, certificate, or acceptance

(final or interim) issued by the Company shall be construed to be a waiver by it of any claim for defective work or improper material.

14. Liens Company projects are public improvement projects within the meaning of Kentucky Revised Statutes Chapter 376.

It is understood and agreed that, in the event of nonpayment by the Contractor of any sums of money due to its workers, its subcontractors and their workers, and/or its suppliers for work performed under this contract; or if at any time there should be evidence of a lien of claim for which, if established, the Company might become liable and which is chargeable to the Contractor, the Company is hereby authorized and empowered to retain out of any payment then due, or thereafter to become due, an amount sufficient to indemnify the Company against any such lien or claim.

The Contractor shall furnish the Company satisfactory evidence, before payments are made under this contract, that there are no mechanics' liens or other encumbrances by reason of materials furnished or work performed by the Contractor. The Contractor hereby agrees to become responsible to the Company for payment of sums in liquidation by reason of any liens which may be filed against the project by reason of the work or materials furnished or ordered by the Contractor. If the Company is put to any expense, or shall suffer any cost by reason of the litigation, settlement, or otherwise on account of any liens which may be threatened or placed against the project in connection with the work contemplated by this contract, the Contractor agrees to reimburse the Company for all such expenditures made by it, including legal fees and expenses. The Company may, from time to time, out of funds due or to become due the Contractor, retain such reasonable sums as it may be deemed necessary for its own reimbursement.

15. Waivers Failure on the part of the Company to insist on strict performance of any covenant, condition, or provision of this Contract on the part of the Contractor shall not be deemed a waiver of any of the Company's rights and/or remedies, nor shall it relieve the Contractor from performing any subsequent obligations strictly in accordance with the terms of this Contract. No waiver shall be effective unless in writing and signed by both the Company and the Contractor. Written waivers shall be limited to the specified provisions of this Contract specifically referred to herein, and shall not be deemed a waiver of any other provision. The written waiver shall not constitute a continuing waiver unless it states otherwise.

16. Schedule of Contractual Work Work shall begin on or before the date indicated on the **BIDDER'S PROPOSAL** form, and shall progress regularly and uninterruptedly thereafter until complete, except in cases of strikes, accidents, unavoidable delays or as it shall be otherwise ordered by the Company or its Project Manager, and shall be finished and fully completed within the number of calendar days stated in the **BIDDER'S PROPOSAL** form. The rate of progress and time of completion being of the essence of this contract. If the time of performance of the Contract is extended, such extension shall be in writing from the Company which shall clearly state the

number of calendar days that are to be added to the contract completion date. If the work is not completed in accordance with the foregoing, it is understood that the Company will suffer damages; and it being impracticable and unfeasible to determine the amount of actual damage, it is agreed that the Contractor shall pay to the Company as fixed and liquidated damages, and not as a penalty, the sum of \$150.00 for each work day that the actual date of completion exceeds the stated contractual date of completion included in the **BIDDER'S PROPOSAL** form, as may be extended as provided herein. When figuring the number of days for which liquidated damages will be assessed, those days following the stated contractual date of completion which are holidays observed by the Company, and those days which experience weather-related delays as defined in the **SUPPLEMENTARY SPECIFICATIONS** and/or **TECHNICAL SPECIFICATIONS**, will not be counted.

Should the Contractor be obstructed or delayed in the prosecution or completion of the work due to:

- a. strike, accident or unavoidable delay, or
- b. delay caused by acts of the Company,

then the time herein fixed for the completion of the work shall be extended for a period equivalent to the time lost by reason of any or all of the causes aforesaid, but, except for such right of extension for the delay, the Contractor shall have no remedy or claim against the Company. In the event an occurrence arises which gives the Contractor cause to have its time of completion extended, the Contractor shall so notify the Project Manager, claiming a right to extension of time, within 48 hours of the occurrence of such delay. But no such allowance is required unless a claim therefore is presented in writing to the Project Manager within forty-eight (48) hours of the occurrence of such delay. The validity and duration of such extension shall be certified by the Project Manager.

#### 17. Alterations of Materials and/or Work

17.a. Extra Work The Contractor agrees that he will do such work as may be required by said Company for the proper construction of the whole work herein contemplated and will make no claim for extra work unless it shall have been done in obedience to written order from said Company or its duly authorized agent. The Contractor shall submit, in writing (attaching thereto the Company's written order) to the Project Manager, all claims for extra work done within 5 days of completion of such work. Failure to file such claims within such time shall be deemed a waiver thereof.

17.b. Right to Make Alterations At any time during the course of the project, the Company, without providing notice to the Contractor's Sureties, reserves the right to make alterations to the as-bid specifications and/or project drawings, with respect to materials, methods of construction, and/or other revisions in the work, as such alterations may be deemed necessary and/or desirable by the Company. Said alterations shall be made in writing by the Project Manager to

the Contractor. Said alterations shall not invalidate the Contract nor release the Sureties, and the Contractor shall agree to accomplish the work as altered, the same as if it had been a part of the original Contract.

The Contractor may request alteration work. However, whether the Company or the Contractor desires the alteration(s), the Contractor is not to proceed with any such alteration work until: a written agreement has been signed by both parties; and the Contractor has received a written directive from the Company to perform said work.

- 17.c. Cost Adjustments Based on Alterations Except as set out herein, when the quantities of materials and/or of work are increased or decreased with written approval from the Project Manager, the supplementary unit prices in the **BIDDER'S PROPOSAL** shall be used to determine the increase or decrease of compensation in the contract amount as a result of said change in quantities. However, if applicable supplementary unit prices are not listed in the **BIDDER'S PROPOSAL** and/or if, in the Contractor's opinion, a single change item results in an increase or a decrease of greater than ten percent (10%) of the original contract amount, then the Contractor may submit a written request for an adjustment to the current contract amount. The Company reserves the right to decrease the contract price if a change decreases the price of the contract by more than ten percent (10%). Upon review and approval of the Contractor's written request, the Company will adjust the current contract amount based upon one of the following: (1) mutual acceptance of a lump sum; (2) actual material (Contractor-supplied), labor, and equipment expenses incurred (or not incurred) by the Contractor plus a 15% overhead and profit markup; (3) unit prices; or (4) a remedy shall be as stated above. Any extension or reduction to the time completion due to an alteration of materials and/or of work shall be jointly agreed upon by the Company and the Contractor.
- 17.d. Notice to Surety If notice of any change affecting the general scope or the provisions of the Contract Documents is required by the provisions of any bond to be given to a Surety, the giving of such notice shall be the Contractor's responsibility, and the amount of each applicable bond shall be adjusted accordingly.
18. Inspection The Contractor shall provide safe, sufficient, and proper facilities at all times for the inspection of the work by the Project Manager or his/her representatives.
19. Termination of Contract Prior to Completion Should the Contractor, at any time, refuse or neglect to supply a sufficient number of properly skilled workers or sufficient materials of the proper quality, or fail in the performance of any of the covenants herein contained, such refusal, neglect, or failure being certified to by the Project Manager, the Company shall be at liberty after three (3) days' written notice to the Contractor and bonding company, to provide any such labor or materials and to

deduct the cost thereof from any money then due, or thereafter to become due, to the Contractor under this contract. If the Project Manager determines that such refusal, neglect, or failure is substantial, the Company may elect to terminate the Contract, enter upon the premises and take possession (for the purpose of completing the work contemplated) of all materials, tools, and appliances thereon; and in the event of such termination, Contractor shall not be entitled to receive any further payment under this Contract until the said work be wholly finished, at which time, if the expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Company on demand plus any liquidation damages that may be owned due to delays caused by the Contractor. Failure by the Contractor to make regular progress toward contract completion may result in termination.

20. Subcontracting The Contractor shall perform, with his/her own organization, work amounting to no less than 50 percent (50%) of the total contract cost, except any items deemed to be specialties. No part of the Contractor's work shall be subcontracted by the Contractor without the express written consent of the Company and in no case shall such consent relieve said Contractor from the obligation herein entered into, or change the terms of this agreement. Subcontractors are subject to approval by the Company.
21. Responsibility In all matters relating to the Contract and construction thereunder, the Contractor shall be responsible for any failure by it, its agents and employees, its subcontractors, their agents and employees, and suppliers of the Contractor or subcontractors to comply with any federal, state or local government statute, ordinance, regulation and law which controls or limits in any way the actions of persons working on the project and which affects the purchase, transportation, installation, or disposition of any materials related to the project. The Contractor shall remove from the project any of its employees or employees of its subcontractors who fail to obey the instructions of the Project Manager or his duly authorized agents in charge of the work, or who shall engage in any disorderly conduct or trespass during the term of the contract as to public or private property in the vicinity of the project, such removal to take place upon request of the Project Manager or his duly authorized agents.
22. Indemnification In addition to the stipulations listed in Article 21 "Responsibility", the Contractor agrees to indemnify, defend, and save harmless the Company, its agents and employees, against all claims asserted against it which arise as a result of the actions or omissions of Contractor, its agents employees, subcontractors, their agents and employees and its suppliers, their agents and employees, whether such claims arise in contract or in tort or because of violation of laws and regulations. The Contractor's obligations under this section include the duty to pay costs incurred by the Company, its agents and employees, in defending any such claims, litigation, or other proceedings which may arise in connection therewith, including court costs and attorneys' fees; provided that the Contractor is duly notified when such claims, litigation, and proceedings are asserted. Further, the Contractor shall provide his/her

own counsel to defend any such claims, actions, causes of actions, or proceedings or may agree to indemnify Company in its use of Company counsel.

23. Warranty If, during the period of one year from the date of the acceptance of the equipment and work by the Company, repairs shall become necessary on account of defective material or unskilled workmanship, the Contractor shall furnish all necessary materials, parts, and labor to disassemble, repair, and reassemble the equipment, defective materials, or correct the defective workmanship, all at the Contractor's expense, and upon failure to do so in ten (10) days after notice by mail has been given, the Company may proceed to have repairs made, and the Contractor shall reimburse the Company for all expenses incurred. The Company reserves the right to request Contractor presence at scheduled warranty inspections held within the 12-month period following acceptance of the project.
24. Equal Employment Opportunities Clause The Company and/or its contractors will not discriminate on the basis of race, color, national origin, sex, or disability in the award and performance of contracts.

During the performance of this contract, the Contractor agrees to comply with the provisions of KRS Section 45.570(2) and Executive Order 11246, as supplemented below to include persons with disabilities.

- 24.a. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age (over 40), national origin, and/or physical or mental disability which, with or without reasonable accommodation, does not prevent the performance of essential job functions. The Contractor will post in conspicuous places, available to employees and applicants for employment, notices to setting forth the provisions of this nondiscrimination clause.
- 24.b. The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, age (over forty), national origin, physical or mental disability which, with or without reasonable accommodation, does not prevent the performance or essential job functions. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, transfer, recruitment, advertising, layoff, termination, rates of pay or other forms of compensation, and selection for training. However, when layoffs occur, employees shall be laid off according to seniority with the youngest employee being laid off first. When employees are recalled, this shall be done in the reverse of the way the employees were laid off.
- 24.c. The Contractor will state in all solicitations or advertisements for employees placed by, or on behalf of, the Contractor that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age (over 40), national origin, physical or mental disability which, with or

without reasonable accommodation, does not prevent the performance of essential job functions.

- 24.d. The Contractor will send a notice to each labor union or representative of workers with which he/she has a collective bargaining agreement or other contract or understanding advising the labor union or workers' representative of the Contractor's commitments under the above nondiscrimination clause and will post notices in conspicuous places, available to employees and applicants for employment, setting forth the above clauses, and the Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- 24.e. The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- 24.f. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or any such rules, regulations, or orders, this Contract may be canceled, terminated, or suspended whole or in part, and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- 24.g. The Contractor will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor.
- 24.h. Unless exempt, the Contractor shall certify that he/she does not, and will not, maintain any facilities for his/her employees to perform any services at any location under her/her control, where segregated facilities are maintained.

The Contractor shall certify that the affirmative action clause set forth by the US Department of Labor, 41 CFR Part 60-250.4, pursuant to the Vietnam Veteran's Readjustment Assistance Act of 1974, is hereby incorporated by reference herein insofar as such clauses are required by such regulations and unless exempt by applicable statutes, rules, regulations, or otherwise.

The Contractor agrees that the affirmative action clause set forth by Section 503 of the Rehabilitation Act of 1973, as amended, 41 CRF Part 60-741.4, is hereby incorporated by reference herein insofar as such clauses are required by such regulations and unless exempt by applicable statutes, rules, regulations, or otherwise.

25. Performance of Covenants The Contractor for itself, successors, and assigns, hereby agrees to the full performance of the covenants contained in the Contract documents, such documents being itemized in the Articles included herein, to be performed by the Contractor. The Company, for itself and its successors, does hereby agree to the full performance of the covenants to be performed by it.

26. Right to Audit The Contractor shall maintain throughout the term of the Contract, and retain for not less than four years after completion thereof, complete and accurate records of all Contractor's costs which relate to the work performed, including the extra work, under the terms of the Contract. The Company, or its authorized representative, shall have the right at any reasonable time to examine and audit the original records.

Records to be maintained and retained by the Contractor shall include, but not be limited to:

- 26.a. Payroll records accounting for total time distribution of the Contractor's employees working full- or part-time on the work;
- 26.b. Canceled payroll checks or signed receipts for payroll payments in cash;
- 26.c. Invoices for purchases, receiving and issuing documents, and all other unit inventory records for Contractor's stores, stock, or capital items;
- 26.d. Paid invoices and canceled checks for materials purchased, subcontractors, and any other third parties' charges;
- 26.e. Original estimate and change order estimate files and detailed worksheets;
- 26.f. All project-related correspondence; and
- 26.g. Subcontractor and supplier change order files (including detailed documentation covering negotiated settlements).

The Company shall also have the right to audit: any other supporting evidence necessary to substantiate charges related to this agreement (both direct and indirect costs, including overhead allocations as they may apply to costs associated with is agreement); and any records necessary to permit evaluation and verification of Contractor compliance with contract requirements and compliance with provisions for pricing change orders, payments, or claims submitted by Contractor or any payees thereof. The Contractor shall also be required to include the right to audit provision

in the contracts (including those of a lump-sum nature) of all subcontractors, insurance agents, or any other business entity providing goods and services.

27. Weapons Policy The current edition of the Company's "Weapons Policy" is on file, for public viewing, in the Office of the Risk Manager.

28. Definitions Whenever the word "Contractor" is used in this contract, it shall be held to mean the person, firm, or corporation contracting for the herein described work.

Whenever the terms "Company" or "Owner" are used, it shall be held to mean the Louisville Water Company of Louisville, Kentucky.

Whenever the terms "Project Manager" or "Engineer" are used, it shall be held to mean the person authorized by the Louisville Water Company to represent it in the execution of the contract.

Whenever the words "he", "his", "him", etc. are used in the Contract Document, it shall be understood that such words mean male, female, or any impersonal business entity.

**BIDDER'S PROPOSAL**

**FOR**

**LOUISVILLE WATER COMPANY  
PROJECT NO.  
BID NO.**

Bids will be received until 11:00 a.m. local time, Wednesday, \_\_\_\_\_, 20\_\_\_\_ for this project.

Louisville Water Company  
550 South Third Street  
Louisville, KY 40202

Dear Purchasing Manager:

Our firm is familiar with the local conditions affecting the cost of work. By submitting this Bidder's Proposal, our firm hereby proposes to furnish all labor, tools, equipment and materials (except for the pipes and pipeline appurtenances specified to be furnished by the Company) required by the Contract Documents to \_\_\_\_\_, and to restore the site, all of the above made ready-for-use in accordance and compliance with the Contract Documents, as defined in Article 1 of the **ARTICLES OF AGREEMENT**, and our firm agrees to be bound by and comply with the 1997 Edition of LWC STANDARD CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS FOR FACILITIES AND PIPELINE CONSTRUCTION and all other documents incorporated therein, for the lump sum base bid compensation of:

---

\$ \_\_\_\_\_

(The amount of bid is stated in both words and figures. In the event of discrepancy between the two, the amount stated in words shall prevail.)

The above-entered bid does not exceed our firm's present prequalification limit as set by the Company. Also, our firm is presently prequalified by the Company to perform this type of work as categorized by the Company.

\\thrd-nas\vol1\USERS\bsoice\PSC filings\DISCOVERY\Original Pleadings\Info provided to  
BD\Ralph\RM Bidders Proposal.doc  
9/2006

\\thrd-nas\vol1\USERS\bsoice\PSC filings\DISCOVERY\Original Pleadings\Info provided to  
BD\Ralph\RM Bidders Proposal.doc  
9/2006

BP-2

The cost for all work shown in the Contract Documents is included in the above-entered bid. For increasing or decreasing quantities of work items from those included in the above-entered bid, the following supplementary unit prices (including materials furnished by the Contractor, labor, and equipment costs, as well as overhead and profit) shall prevail in increasing or decreasing the Contract price:

1. Rock excavation by means of blasting (\$60 per cubic yard, maximum. The Company shall pay a maximum of \$60.00 per cubic yard of rock removed by means of blasting.) \_\_\_\_\_/C.Y.
2. Rock excavation by mechanical means (\$125 per cubic yard, maximum. The Company shall pay a maximum of \$125.00 per cubic yard of rock removed by mechanical means.) \_\_\_\_\_/C.Y.
3. XX" diameter iron water main, complete
  - In pavement. . . . . \_\_\_\_\_/L.F.
  - In lawn. . . . . \_\_\_\_\_/L.F.
4. Fire hydrant installation (short), complete \_\_\_\_\_/each
5. Fire hydrant installation (long), complete \_\_\_\_\_/each
6. Short domestic water service adjustment (5/8"- 1"), complete
  - Relocate. . . . . \_\_\_\_\_/each
  - Renew. . . . . \_\_\_\_\_/each
  - Transfer. . . . . \_\_\_\_\_/each
7. Long domestic water service adjustment (5/8"- 1"), complete
  - Relocate. . . . . \_\_\_\_\_/each
  - Renew. . . . . \_\_\_\_\_/each
  - Transfer. . . . . \_\_\_\_\_/each
8. Short domestic water service adjustment (1½"- 2"), complete
  - Relocate. . . . . \_\_\_\_\_/each
  - Renew. . . . . \_\_\_\_\_/each
  - Transfer. . . . . \_\_\_\_\_/each
9. Long domestic water service adjustment (1½"- 2"), complete
  - Relocate. . . . . \_\_\_\_\_/each
  - Renew. . . . . \_\_\_\_\_/each
  - Transfer. . . . . \_\_\_\_\_/each

- |   |                  |
|---|------------------|
| 10. Short domestic water service adjustment<br>(4" - 8"), complete                              |                  |
| Relocate. ....  | _____ /each      |
| Renew. ....   | _____ /each      |
| Transfer. ....  | _____ /each      |
| 11. Long domestic water service adjustment<br>(4" - 8"), complete                               |                  |
| Relocate. ....  | _____ /each      |
| Renew. ....   | _____ /each      |
| Transfer. ....  | _____ /each      |
| 12. Short fire service adjustments<br>(4" FS - 8" FS), complete                                 |                  |
| Relocate. ....  | _____ /each      |
| Renew. ....   | _____ /each      |
| Transfer. ....  | _____ /each      |
| 13. Long fire service adjustments<br>(4" FS - 8" FS), complete                                  |                  |
| Relocate. ....  | _____ /each      |
| Renew. ....   | _____ /each      |
| Transfer. ....  | _____ /each      |
| 14. Preconstruction valve inspection  | _____ /each      |
| 15. Valve excavation and backfill (including backfill,<br>compaction, and pavement restoration) | _____ /each      |
| 16. Repack bonnet gland and/or repair operating nut   | _____ /each<br>h |
| 17. Replace existing valve with new valve   |                  |
| 4" - 8"   | _____ /each<br>h |
| 12"   | _____ /each<br>h |
| 16"   | _____ /each<br>h |
| 4" - 8"   | _____ /each<br>h |
| 18. Install new valve along new main  |                  |
| 12"   | _____ /each<br>h |
| 16"   | _____ /each<br>h |

In the event of a change in the scope of work that is not applicable to any of the above-listed supplementary unit price work items and/or in the event an applicable supplementary unit price work item is not listed above, then compensation/credit for said change in the scope of work and/or not-listed supplementary unit price work item shall be determined by the conditions listed under Article 17 "Alterations of Materials and/or Work" of the **ARTICLES OF AGREEMENT**.

(If a Bid Bond is required, the following paragraph applies)

The attached bid security in the sum of \$ \_\_\_\_\_ is to become the property of the Company for the delay and expenses to the Company in the event our firm does not deliver the documents, appropriately complete and executed, as set forth in the succeeding paragraph. In the event the damages incurred by the Company exceed the amount of the bid security, the bidder will be responsible for and will reimburse the Company for the additional damages.

Within twenty-one (21) calendar days of written notice of the acceptance of this bid, our firm shall submit the following: (1) Performance and Payment Bonds, as required, (2) the required Certificate of Insurance, (3) a Company supplied Equal Employment Opportunity Certification form with a workforce profile, (4) a Company supplied Certified M/W/HBE Subcontractor Utilization Report form, and (5) a list of all materials to be furnished by our firm on this project, if any. Upon timely receipt of the above-listed documents and of any and all other required documents listed in Section 3.2 of the **INSTRUCTIONS TO BIDDERS**, and upon the subsequent acceptance of said documents by the Company, the Company shall execute the contract and return a copy to our firm. If the above-listed items are not delivered by our firm to the Company as set forth herein, or if the same are not accepted by the Company, the Company may, at its option, elect to void our firm's bid and/or penalize our firm's prequalification status.

If awarded this contract, we agree to begin the work (within) \_\_\_\_\_ (calendar days) after the contract is executed by the Company and we agree to complete the work (within) \_\_\_\_\_ (calendar days) from the date the contract is executed by the Company.

This bid shall remain outstanding, and may not be withdrawn, for a period of sixty (60) calendar days after the scheduled closing time for receiving bids.

Acknowledgment of Addenda (if applicable):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Respectfully submitted,

Firm: \_\_\_\_\_

By: \_\_\_\_\_  
(Signature of authorized officer or agent required)

\_\_\_\_\_  
(Name printed or typed)

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Accepted for the Louisville Water Company,

By: \_\_\_\_\_  
Lynn Humphrey  
Purchasing Manager

Date: \_\_\_\_\_

Attest: \_\_\_\_\_

Date: \_\_\_\_\_

Approved, Form and Legality:

By: \_\_\_\_\_  
Barbara K. Dickens  
Vice President, General Counsel

**CONTRACT CHANGE ORDER FORM**

(Instructions on reverse side)

No. \_\_\_\_\_

BID#/PROJECT: \_\_\_\_\_

DATE OF ISSUANCE: \_\_\_\_\_ EFFECTIVE DATE \_\_\_\_\_

OWNER: \_\_\_\_\_

OWNER's Contract No. \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_ ENGINEER: \_\_\_\_\_

You are directed to make the following changes in the Contract Documents.

Description:

Reason for Change Order:

Attachments: (List documents supporting change)

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIME:
Original Contract Price \$ _____	Original Contract Times Substantial Completion: _____ Ready for final payment: _____ days or date
Net changes from previous Change Orders No. ____ to No. ____ \$ _____	Net change from previous change Orders No. ____ to No. ____ _____ days
Contract Price prior to this Change Order \$ _____	Contract Times Prior to this Change Order Substantial Completion: _____ Ready for final payment: _____ days or date
Net Increase (decrease) of this Change Order \$ _____	Net Increase (decrease) of this Change Order _____ days
Contract Price with all approved Change Orders \$ _____	Contract Times with all approved Change Orders Substantial Completion: _____ Ready for final payment: _____ days or date

RECOMMENDED:  By _____ Engineer (Authorized Signature)	APPROVED:  By _____ Owner (Authorized Signature)	ACCEPTED:  By _____ Contractor (Authorized Signature)
Date: _____	Date: _____	Date: _____

EJCDC No. 1910-8-B (1990 Edition)  
Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America.

## **CHANGE ORDER**

### **INSTRUCTIONS**

#### **A. GENERAL INFORMATION**

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Time. Changes that have been initiated by a Work Directive Change must be incorporated into a subsequent Change Order if they affect Price or Time.

Changes that affect Contract Price or Contract Time should be promptly covered by a Change Order. The practice of accumulating change order items to reduce the administrative burden may lead to unnecessary disputes.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Time, a Field Order may be used.

#### **B. COMPLETING THE CHANGE ORDER FORM**

Engineer initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Contractor for approval. After approval by Contractor, all copies should be sent to Owner for approval. Engineer should make distribution of executed copies after approval by Owner.

If a change only applies to price or to time, cross out the part of the tabulation that does not apply.

**INSTRUCTIONS  
AND  
SPECIFICATIONS  
FOR**



**LOUISVILLE WATER COMPANY  
LOUISVILLE, KENTUCKY**





- LWC hereby gives notice to Contractors (and, Contractors are directed to provide notice to their employees, agents, assigns and Contractor's subcontractors, their employees, agents and assigns, and Contractor's suppliers, their employees, agents and assigns on the project site) that LWC holds an Erosion Prevention Sediment Control Plan General Permit issued by MSD, pursuant to the Jefferson County Ordinance Chapter 159, Erosion Prevention and Sediment Control, and, that certain activities require additional Individual Site Disturbance Permits, also issued by MSD, pursuant to the Jefferson County Ordinance Chapter 159, Erosion Prevention and Sediment Control.
- Pursuant to the requirements of that General Permit and any required individual site disturbance permits, LWC further gives notice to Contractors of the County's Erosion Prevention and Sediment Control Ordinance. LWC hereby expressly requires Contractors, their employees, agents, and assigns and Contractor's subcontractors, their employees, agents and assigns, and Contractor's suppliers, their employees, agents and assigns on the project site to comply with the provisions of that Ordinance and all permits, General and Individual, as part of the required compliance with "any federal, state or local government statute, ordinance, regulation and law which controls or limits in any way the actions of persons working on the project and which affects the purchase, installation, or disposition of any materials related to the project" at Paragraph 21, Responsibility, Articles of Agreement at AA-10. This Contractor responsibility for compliance with the Erosion Prevention and Sediment Control Ordinance is in addition to the responsibilities set out in Paragraph 21, Responsibility; all other responsibilities in Paragraph 21, Responsibility, remain unchanged.
- LWC hereby expressly includes in the Contractor's indemnification of LWC for violation of laws and regulations, at Paragraph 22, Indemnification, Articles of Agreement at AA-10, indemnification of LWC for any Contractor violation of the Erosion Prevention and Sediment Control Ordinance, including any violation of the General Permit and/or Individual Site Disturbance Permit, including, but not limited to any such violation by Contractor, Contractor's employees, agents, and assigns and Contractor's subcontractors, subcontractor's employees, agents or assigns and Contractor's suppliers and their employees, agents and assigns. This indemnification is in addition to the indemnifications in Paragraph 22, Indemnification; all other indemnifications in Paragraph 22, Indemnification, remain unchanged.

**SUBCONTRACTOR EXCLUSION STATEMENT  
(Form GFE-1)**

**COMPLETE THIS FORM ONLY IF SUBCONTRACTORS AND/OR SUBSUPPLIERS WILL NOT BE USED DURING THE COURSE OF THIS AGREEMENT**

The Bidder agrees to perform all work involved in this contract without the utilization of subcontractors and/or subsuppliers. If, after this contract is awarded, the bidder requires the work of subcontractors and/or subsuppliers to fulfill the contract obligation, the bidder shall furnish information required by LWC to indicate all the subcontractors and/or subsuppliers (including, but not limited to, MBE and WBE subcontractors and/or subsuppliers) which it intends to utilize as subcontractors and/or subsuppliers, i.e. the Subcontractor Utilization Form (GFE-2). Failure to comply with these requirements shall be deemed a failure to demonstrate "good faith efforts" and shall subject Bidder to disqualification from participation in future bidding opportunities offered by LWC, as described above at Pages 4 and 5.

The Bidder agrees that subcontractors and/or subsuppliers shall not be used for work on this contract without the express written consent of LWC. The undersigned hereby certifies that he or she has read the terms of this statement and is authorized to bind the bidder to these terms.

Witness, the agreement of the bidder to the terms of this Statement. Bidder's failure to sign and return this Statement if no subcontractors and/or subsuppliers are being utilized shall cause the Bidder's bid to be deemed non-responsive.

---

Name of Company

---

Project/Bid/RFP Name

---

Project/Bid/RFP Number

---

Dollar Amount

---

Name of Authorized Agent

---

Date

---

Signature of Authorized Agent

---

Title

**SUBCONTRACTOR SOLICITATION AND UTILIZATION  
(Form GFE-2)**

**List all subcontractors and/or subsuppliers that will be utilized on this project. If the 15% MBE goal or the 5% WBE goal has not been met, then list all subcontractors and/or subsuppliers that were solicited to work on this project prior to bid submittal. This list must include all subcontractors and/or subsuppliers (non-minority owned or non-women owned businesses as well as all MBEs and WBEs).**

LWC Project Name: \_\_\_\_\_ Project Bid Number: \_\_\_\_\_

Project Bidder Name: \_\_\_\_\_ Project Bid Date: \_\_\_\_\_

Total amount that is proposed to be provided by all subcontractors and/or subsuppliers (listed below): \$ \_\_\_\_\_

Total amount of all subcontracting to be provided by MBE subcontractors and/or subsuppliers: \$ \_\_\_\_\_; MBE Percentage of Total Bid \_\_\_\_\_%

Total amount of all subcontracting to be provided by WBE subcontractors and/or subsuppliers: \$ \_\_\_\_\_; WBE Percentage of Total Bid \_\_\_\_\_%

\_\_\_\_\_ (PRIME BIDDER) does commit itself to the following subcontractor and/or subsupplier utilization on the above noted project/bid/RFP:

The bidder agrees to furnish information required by LWC to indicate all the subcontractors and/or subsuppliers (including, but not limited to, MBE and WBE subcontractors and/or subsuppliers) which it intends to utilize. The bidder, through its authorized undersigned agent, acknowledges and agrees that any breach of this commitment as set forth in the **Post-Award Stage, Criteria for Assessing Good Faith Effort**, shall be deemed a failure to demonstrate good faith efforts and shall subject Bidder to disqualification from participation in future bidding opportunities offered by LWC, as described above in the **Consequences for Failure to Demonstrate Post-Award Performance Good Faith Effort** Section of the LWC Minority And Women Business Enterprise Program Requirements.

Witness, the agreement of the bidder to the terms of this Statement, **if utilizing subcontractors and/or subsuppliers**. Bidder's failure to sign and return this Statement and attach all supporting documentation shall cause the Bidder's bid to be deemed non-responsive.

\_\_\_\_\_  
SIGNATURE OF AUTHORIZED AGENT      NAME OF AUTHORIZED AGENT      TITLE      DATE      PHONE NUMBER

**Supporting proof of good faith effort attempts must be attached.**

**The subcontractor(s) listed below are for purposes of good faith determination only and not a guarantee of work to any subcontractor.**

**The following is to be supplied for each subcontractor and/or subsupplier contacted prior to bid.**

Subcontractor/ Subsupplier Name	Phone Number	Contact Name	MBE (Yes/No) *	WBE (Yes/No) *	Type of Work, Supply and/or Service (Fixed Price, Materials, Labor, Equipment, and/or Services)	Replied to Inquiry (Yes/No)	Quote Offered (Yes/No)	Sub To Be Used (Yes/No)	Subcontract Amount



**WAIVER OF MBE AND/OR WBE UTILIZATION  
(Form GFE-3)**

The bidder has contacted the MBE and WBE subcontractors and/or subsuppliers listed below that are certified to perform work, services and/or supply goods or materials, but Bidder was unable to secure the services of MBEs or WBEs to meet LWC's goals for the reasons noted below; or in the alternative, the Bidder can not find MBE and/or WBE subs to perform work, provide services or supply goods and the Bidder has contacted the following Certifying Agencies in an effort to identify MBE and WBE subcontractors and/or subsuppliers able to perform work or services or supply goods or materials. *(Attach supporting documentation for each MBE or WBE for which you are requesting waiver.)*

LWC Project Name: \_\_\_\_\_ Project Bid Number: \_\_\_\_\_

Project Bidder Name: \_\_\_\_\_ Project Bid Date: \_\_\_\_\_

Witness, the certification by the undersigned that bidder contacted the following MBE and/or WBE subcontractor and/or subsupplier to obtain a bid for work items to be performed on the above referenced project. Further, the bidder is unable to reach LWC's MBE and/or WBE utilization goals for this project and the bidder herein formally requests a waiver of MBE and/or WBE utilization for the reasons noted below.

\_\_\_\_\_  
SIGNATURE OF AUTHORIZED AGENT      NAME OF AUTHORIZED AGENT      TITLE      DATE      PHONE NUMBER

**The subcontractor(s) listed below are for purposes of good faith determination only and not a guarantee of work to any subcontractor.**

**Supporting documentation for each MBE/WBE that a waiver is herein requested must be attached** *(type of contact, correspondence, quotes, availability notices, etc.).*

SECTION A – Subcontractor/ Subsupplier Name	MBE or WBE	Type of Work, Supply and/or Service <i>(Fixed Price, Materials, Labor, Equipment, and/or Services)</i>	Subcontractor/ Subsupplier Contact Method <i>(Certified Mail, Phone, Facsimile, In Person, E-mail, etc.)</i>	Claimed Basis for Waiver of MBE and/or WBE Utilization			
				MBE/WBE Sub Non- Responsive	MBE/WBE Sub Not Available	MBE/WBE Sub's Quote is Not Competitive	Other Reason <i>(Attach separate explanation)</i>
<b>SECTION B – Name of Certifying Agency</b>							



**LOUISVILLE WATER COMPANY  
MINORITY AND WOMEN BUSINESS ENTERPRISE  
PROGRAM REQUIREMENTS**

**Ron Green, MBE AND WBE Program Manager  
Phone Number 502.569.3658**

Louisville Water Company (LWC) is committed to increasing the effective use of Certified Minority Business Enterprises (MBEs) and Women Business Enterprises (WBEs) capable of meeting LWC subcontracting requirements. We believe that the role of these businesses is very important to the Louisville Metro Community.

**I. DEFINITIONS:**

**Affirmative Action Plan:** is defined as set forth in Executive Order 11246.

**Agreement:** A written contract that binds participating persons or entities and governs the terms and conditions for providing work, goods, materials or services for LWC.

**Awardee:** A person or entity to whom LWC awards business pursuant to a bid, quote or proposal.

**Bid:** A written invitation to provide goods or services to LWC or perform work for LWC. The invitation includes contractual terms.

**Bidder:** A person or entity who submits a bid, quote or proposal to LWC for construction, goods or services of any kind.

**Certified Company:** A minority or women owned company that is at least 51% owned, operated and controlled by the minority or women entity. The certification must be issued by a legitimate certifying agency such as a government, local, state or national entity that demonstrate the following activity in granting certification: 1) Proof of ownership 2) Financial review and 3) On-site visit. Self-Certifications will not be considered and the Louisville Water Company reserves the right to accept or reject any questionable certifications.

**Contractor:** An entity or person who enters into an Agreement with LWC to perform the work described in the Agreement and who supplies or otherwise provides for labor, materials, equipment, supervision, management and knowledge or know-how to perform said work in accordance with LWC specifications and requirements.

**Good Faith:** Honesty in fact in the conduct or transaction concerned and the observance of reasonable commercial standards of fair dealing.

**Quote (quotation):** A written offer to provide specific work, goods, materials or services for a price (fixed, unit or combination).

**Request for Competitive Negotiation (RCN):** A method of bidding whereby evaluation criteria are used to score respondents and price is not the sole determining factor in selecting awardee.

**Request for Proposal (RFP):** A method of bidding whereby the resulting agreement is a professional service contract. Requests for Proposals allow the bidder to propose a method of fulfilling the business need without stringent technical specifications being provided by LWC.

**Service Provider:** A person or entity that provides goods, services, consulting or contracting, as a first tier supplier, to LWC.

**Subcontractor or Sub-supplier:** A person or entity that is paid by an LWC awardee for any work, goods, materials or services that are part of an LWC agreement.

**Supplier:** A person or entity that provides goods, materials or services to LWC.

THE FOREGOING DEFINITIONS APPLY TO ALL REQUIREMENTS SET OUT HEREIN.

## II. INTRODUCTION:

If this agreement requires or warrants the use of subcontractors/sub-suppliers, **good faith efforts (GFE)** to utilize MBEs and WBEs will be a consideration in evaluating and determining the responsiveness of the bidders seeking this contract.

When subcontracting for this work, the Bidder shall make **good faith efforts** to expend a minimum of fifteen percent (15%) of the total dollar amount of the contract with certified MBEs and five percent (5%) of the total dollar amount of the contract with certified WBEs. MBEs and WBEs may be used as subcontractors/sub-suppliers for any work, goods, materials or services that are part of an LWC agreement.

In assessing bids, Louisville Water Company (LWC) will consider whether the Bidder has made the required **good faith effort** to obtain quotes from MBE and WBE subcontractors/sub-suppliers. Acceptable proof of a good faith effort is a return mail receipt or a written "NO BID" response from certified MBEs or WBEs. Leaving phone messages is not acceptable proof of a good faith effort. Bidders must include quotes from subcontractors/sub-suppliers with the bid package as described in the attached directions.

Failure to fully complete all applicable GFE forms regarding the utilization and availability of MBE and WBE subcontractors/sub-suppliers SHALL render this a non-responsive bid.

Good faith efforts are demonstrated when a Bidder 1) meets LWC's 15% MBE and 5% WBE goals or 2) does not meet the 15%/5% goals but demonstrates good faith efforts as defined in DEFINITIONS, Section I, to reach the goals in circumstances where subcontracting or sub-supplying opportunities exist, or 3) supplies all goods, labor, equipment, materials, etc. necessary to complete the work or provide the goods/service.

Bidders must provide with their bid a copy of the written quote from each MBE or WBE participant, stating pricing and work/service(s) to be performed by each MBE or WBE.

All Awardees: 1) Shall have an approved Affirmative Action Plan, if required; 2) Shall furnish LWC a list of all subcontractors/sub-suppliers for the awarded job; 3) Shall be required to furnish a monthly workforce analysis; 4) Shall give the LWC representative access to the worksite; and 5) Shall give the LWC representative reasonable access to Contractors' personnel records.

All questions should be directed to the LWC Project Manager or LWC Buyer at 569-3600.

### Good Faith Efforts

Bidders are expected to make reasonable efforts to meet LWC's MBE and WBE goals on every project. Efforts that are merely pro forma are not "good faith efforts." Each Bidder must demonstrate that, given all relevant circumstances, he/she actively and aggressively sought to meet applicable MBE and WBE goals.

### **III. CRITERIA FOR ASSESSING GOOD FAITH EFFORTS:**

#### **Pre-Award Stage:**

Criteria that will be used to determine whether a Bidder has demonstrated "good faith efforts" include any or all of the following:

1. Attending the Pre-bid meeting, if one is held, regarding the specific project.
2. Providing written notice (certified mail/return receipt requested, preferred) to a reasonable number of certified MBEs or WBEs, with the reasonableness of the number to be determined based on the amount and kinds of work proposed by the Bidder to be performed by subcontractors/sub-suppliers.
3. Allowing sufficient time for MBEs or WBEs to respond to written notice. "Sufficient time" will be considered no less than three (3) working days.
4. Following up written notification with telephone calls or other communications.
5. Contacting MBE OR WBE Assistance Agencies/Organizations (with written documentation of those contacts) for assistance in finding certified MBE or WBE firms.
6. Providing MBEs or WBEs with adequate information about the project when requesting quotations, i.e., identifying potential subtrades involved in the project and identifying a potential dollar range for work proposed to be performed by those subtrades.
7. Advertising in general circulation media as well as in media aimed at minorities and women at least 5 calendar days before Bids or Proposals are due.
8. Making efforts to assist MBEs or WBEs in obtaining bonding, credit, certification or insurance.
9. Making efforts to meet and negotiate with potential MBE or WBEs in advance of any particular bidding opportunity.
10. Expending efforts to expand Bidder's search for MBEs or WBEs beyond local or regional geographic boundaries when the expertise required is not available locally/regionally or when it is cost effective to do so based on the work to be performed.
11. No evidence exists to indicate that the Good Faith Efforts shown by Bidder are pretense to allow Bidder to select a quote from a non MBE or WBE subcontractor instead of a quote from a MBE or WBE subcontractor.

## Non-Responsive Bids

LWC will promptly advise, in writing, any low Bidder who fails to meet the “good faith effort” requirements of this program by failure to complete and submit all required documents. Their bid shall be rendered non-responsive.

### **Post-Award Stage:**

An assessment of post-award demonstration of “good faith efforts” in the Awardee’s performance on an awarded contract shall include the following:

1. Having an approved Affirmative Action Plan, if required.
2. Furnishing LWC a list of all subcontractors/sub-suppliers for the awarded job.
3. Furnishing a monthly workforce analysis.
4. Providing LWC representatives access to the worksite.
5. Giving LWC representatives reasonable access to Contractors’ personnel records to verify consistency with submitted documentation.
6. Providing required *good faith effort* documents.
7. Using subcontractors/sub-suppliers on the project despite having completed and filed with LWC a Subcontractor Exclusion Statement on the project.
8. Contracting with those MBE and WBE subcontractors/sub-suppliers listed on bid documents unless there is documentation of a compelling change in circumstances of the project which necessitated change in subcontractors/sub-suppliers, provided that project manager has given approval of such change in advance.

Good Faith Efforts will not be found to be demonstrated where an Awardee: 1) Submits documents which he/she knows or should have known to be false. For purposes of this determination, knowledge of Awardee’s agents, employees and assigns shall be imputed to Awardee; 2) Fails to provide copies of “proof of payment.”; and 3) Fails to submit change orders.

### Consequences for Failure to Demonstrate Post-Award Performance Good Faith Effort

#### *Construction Bidding Process:*

Contractors whose post-award performance is inconsistent with the “good faith efforts” described in their bids/contracts will be disqualified from participating in LWC’s bidding process for construction contracts for set lengths of time, based on the number of failures within the times set out below:

1<sup>st</sup> violation = 3 months

2<sup>nd</sup> violation within 12 consecutive months of the 1<sup>st</sup> violation = 6 months

3<sup>rd</sup> violation within 12 months of the 2<sup>nd</sup> violation = 1 year

Multiple disqualifications periods shall run consecutively.

The MBE/WBE Program Manager has discretion in determining whether a violation has occurred after conducting a review of all information obtained relevant to the occurrence.

*RFP Process, RCN Process and Process for Procuring Goods and Services:*

Service providers whose post-award performance is inconsistent with the “good faith efforts” described in their bids/contracts will be disqualified from participating in LWC’s RFP, RCN and Bid process.

Suppliers whose post-award performance is inconsistent with the “good faith efforts” described in their bids/contracts will be disqualified from providing Goods and Services.

Disqualification will be assessed as follows:

- 1<sup>st</sup> violation = disqualified from participating in the next RFP, RCN or bidding process
- 2<sup>nd</sup> violation within 12 consecutive months of the 1<sup>st</sup> violation = disqualified from participating in the next two RFP, RCN or bidding processes
- 3<sup>rd</sup> violation within 12 months of the 2<sup>nd</sup> violation = disqualified from participating in the next three RFP, RCN or bidding processes

Multiple disqualifications periods shall run consecutively.

The MBE/WBE Program Manager has discretion in determining whether a violation has occurred after conducting a review of all information obtained relevant to the occurrence.

**IV. GFE FORMS TO COMPLETE:**

1. No Subcontractors/sub-suppliers used

Form to complete: GFE-1, Subcontractor Exclusion Statement

2. Contractor meets 15% MBE and 5% WBE goal.

Forms to complete: GFE-2, Subcontractor Solicitation and Utilization

3. Contractor will **not** meet the 15% MBE goal.

Forms to complete: GFE-2, Subcontractor Solicitation and Utilization  
GFE-3, Waiver of MBE and/or WBE Utilization

4. Contractor will **not** meet the 5% WBE goal.

Forms to complete: GFE-2, Subcontractor Solicitation and Utilization  
GFE-3, Waiver of MBE and/or WBE Utilization

‘Types of Work’ or ‘Supply &/or Service Provided’ categories are listed on Forms GFE-2 and GFE-3.

**Failure to complete and submit the applicable forms as listed above, shall result in bid being deemed non-responsive.**

**The Louisville Water Company will supply a listing of MBEs AND WBEs certifying agencies upon request.**

**V. DIRECTIONS FOR COMPLETING LOUISVILLE WATER COMPANY’S GFE FORMS:**

The GFE forms will document your good faith effort in terms of soliciting participation by minority and women owned businesses. Incomplete, untimely, or inaccurate GFE forms shall be deemed evidence of a non-responsive bid.

**The GFE forms consist of the following documents. Please read this section in its entirety.**

- A. *Subcontractor Exclusion Statement* (Form GFE-1): Form to be completed if you will employ **no subcontractors/sub-suppliers** in fulfilling this agreement.
- B. *Subcontractor Solicitation and Utilization* (Form GFE-2): Form to be completed to show all subcontractors/sub-suppliers solicited prior to bid submittal.
- C. *Waiver of MBE and/or WBE Utilization* (Form GFE-3): Form to be completed if, despite your good faith efforts, your proposal fails to meet LWC's 15% MBE or 5% WBE utilization goals. All MBE and WBE firms that have been solicited but not utilized must be listed here.

*For assistance in completing the above forms, you may contact the LWC Project Manager or LWC Buyer at 569-3600.*

## **1. General Points to Remember**

- Do not complete the "Subcontractor Exclusion Statement" if there is a need for subcontractor/sub-supplier utilization on this project. If subcontractors/sub-suppliers are required for your bid, you need to complete the documents explaining your MBE and WBE subcontractor/sub-supplier utilization.
- When writing information about your subcontractors/sub-suppliers, supply all requested information (subcontractor/sub-supplier *name, phone number, contact name, MBE or WBE status, type of work, whether sub replied, quote offered, dollar value, percentage of total bid price, etc.*).
- If you are an MBE or a WBE bidding on this project as a general contractor, you must still make a **good faith effort** to solicit and secure participation from 15% MBEs and 5% WBEs.
- If bidders efforts to identify MBEs or WBEs are exhausted, please contact the LWC Project Manager or LWC Buyer at 569-3600.
- Remember to complete every line and provide all information requested; do not leave any blanks.

## **2. Deadline for Submission of GFE Forms**

- Construction Bid Projects: Properly completed GFE forms are to be submitted with bid response. If you have any questions concerning the date and time of bid opening, you may contact the Buyer (502.569.3600) for additional information.
- Request for Proposals: Forms are due with proposal response.

# INSTRUCTIONS TO BIDDERS

## 1. PRE-BID REQUIREMENTS

### 1.1 Prequalification of Construction Contractors

The Louisville Water Company, hereinafter called "Company" in these INSTRUCTIONS TO BIDDERS as well as all of the other Contract Documents, shall accept bids only from contractors who have been prequalified by the Company.

- 1.1.1. Application/Renewal Prequalification forms are available from the Purchasing Department of the Louisville Water Company, 550 South Third Street, Louisville, Kentucky 40202, telephone (502) 569-3600. If prequalified, the bidder should contact the Purchasing Department for administrative requirements needed for continued compliance with the Company's prequalification program. The Company makes no representations on the time needed to complete the prequalification process.

The Company encourages Minority, Woman and Handicapped Business Enterprises (M/W/HBE) to make application for prequalification, and to submit bids if prequalified.

- 1.1.2. Prequalification Limit/Category The bidder may submit a bid up to, but not exceeding, the amount of the respective bidder's monetary prequalification limit as set by the Company. Also, the bidder must be prequalified by the Company for the category of work identified for the respective project as identified in the ADVERTISEMENT FOR BID. Bids from bidders that do not meet these requirements shall be disqualified.

### 1.2. Submission of Bid

The bidder must submit his/her bid in accordance with the following:

- 1.2.1. Bid Package Each bid shall be submitted in a sealed envelope, stating on the outside of the envelope: the name of the bidder (firm), the bidder's complete mailing address, and the name of the Company project and the Company's project number for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed within a mailing package. All bids forwarded by mail must be addressed to the Purchasing Manager, Louisville Water Company, 550 South Third Street, Louisville, Kentucky 40202, and sent by registered mail, return receipt requested. Bids submitted by telegraphic means, including fax, do not qualify for consideration.

- 1.2.2. Place/Time The bid must be received in the Purchasing Department of the Company's Main Office Building located at 550 South Third Street, Louisville, Kentucky 40202, up to 11:00 a.m. local time, of the date stipulated in the **ADVERTISEMENT FOR BID**. If delivered to the Purchasing Department, the bid will be clocked-in to record the official date and time of receipt. The bid may be presented in person to the Purchasing Department at the public bid opening prior to 11:00 a.m. local time, on the date set for receiving bids for the respective project. If received after the day and hour stipulated, the bid shall not be accepted, and shall be returned unopened to the bidder. The Company shall not assume responsibility for any late bid for any reason, including the timing of mail deliveries.
- 1.2.3. Withdrawing Bids Bids may be withdrawn at any time prior to 11:00 a.m. local time on the day set for opening bids, but may not be withdrawn after the bid-opening time has passed.
- 1.2.4. Lump Sum Bid The submitted bid shall be on lump sum basis, and shall constitute the total remuneration for the work to be performed, including taxes (see Item 1.2.5) and, unless otherwise specified, materials and equipment to be installed.
- 1.2.5. Taxes The submitted bid shall be the total remuneration for the work to be done, taking into account all applicable governmental fees and taxes, including, but not limited to, Kentucky sales and usage tax.
- 1.2.6. Start/Completion Dates If blank spaces are provided in the **BIDDER'S PROPOSAL** form, the bidder shall enter start/completion dates on the **BIDDER'S PROPOSAL** form. The time designated shall be inclusive of materials delivered, if applicable.
- 1.2.7. Prevailing Wage Advertisement The Company shall advertise the project as a prevailing wage contract when the Project Manager's estimate, (including labor, materials and equipment) exceeds \$250,000, as established by KRS 337.505 - 550. Pursuant to KRS 337.540, laborers shall not be permitted to work more than 8 hours per day or more than 40 hours in a work week, unless they meet the requirements for a 10-hour work day. Overtime must be paid for hours worked over 8 per day or 40 per week. If a 10-hour day is authorized, overtime shall be paid for hours worked over 10 per day or 40 per week.

1.3. Pre-bid Conference

Date and time of a pre-bid conference, if applicable, is indicated in the **ADVERTISEMENT FOR BID**. If the **ADVERTISEMENT FOR BID** states that attendance at a pre-bid conference is mandatory, bids shall not be accepted

\\thrd-nas\vol1\USERS\boice\PSC filings\DISCOVERY\Original Pleadings\Info provided to BD\Ralph\RM INSTRUCTIONS TO BIDDERS revised May 2007.doc

from those persons or firms who did not attend said conference and sign the attendance sheet. The purpose of this conference is to clarify the contents of the bid in order to prevent any misunderstanding of the Company's position. Any questions or comments regarding the requirements of this bid or any apparent omission or discrepancy should be presented to the Company during this conference. The Company will then determine the appropriate action necessary, if any, and issue a written addendum. Oral remarks will not constitute an addendum to this bid.

## 2. TERMS OF BID AND AWARD OF CONTRACT

### 2.1. Terms of Bid/Agreement of Contract Documents

The submission of a bid is the bidder's agreement to meet every condition and requirement of the specifications and the project drawings, as well as all of the Contract Documents listed and incorporated in 1997 LWC Standard Contract Documents and Technical Specifications for Facilities and Pipeline Construction, Article 1, "Contract Documents".

### 2.2. Addenda

The Company reserves the right to issue addenda for the purpose of modifying the Contract Documents at any time prior to the day and hour set for the opening of bids. The bidder shall acknowledge, in the **BIDDER'S PROPOSAL** form, receipt of each and every addendum.

### 2.3. Criteria for Award of Contract

Award of contract shall be made on the lowest evaluated bid entry having substantial compliance, as interpreted by the Company, with the Contract Documents as defined in Article 1 of the **ARTICLES OF AGREEMENT**. The criteria utilized for evaluation of bids shall include: base bid, contractual starting date, contractual completion date, contractual time from start to completion, quality of material, value engineering, affected Company administration costs, evaluation of alternative bid items, life cycle costing, construction scheduling of the Contract as part of a larger project or as work item by others, and a determination of the responsibility of the bidder. Further, consideration may be incorporated into the evaluation process to award contracts that will allow the Company to achieve established goals associated with its Certified M/W/HBE Program.

### 2.4. Right to Award Contract

The Company reserves the right to accept any bid, disqualify any or all bids, reject any or all bids, and to waive any information and/or irregularities in any bid, where such waiver is not deemed significant. The current edition of the Company's "Guidelines for Bid Informalities and Irregularities" is on file, for public viewing,

\\thrd-nas\vol1\USERS\bsoice\PSC filings\DISCOVERY\Original Pleadings\Info provided to BD\Ralph\RM INSTRUCTIONS TO BIDDERS revised May 2007.doc

in the Purchasing Office, and may be used by the Company to resolve bid informalities and irregularities. Said "Guidelines" is not intended to be all-inclusive and is in no way intended to limit the Company's right to accept, disqualify, and reject bids.

### 3. **REQUIRED DOCUMENTS**

#### 3.1. **Required Bid Documents**

3.1.1. **Bidder's Proposal Form** The bidder shall submit and sign the **BIDDER'S PROPOSAL** form supplied by the Company for the respective project. All blank spaces contained in said form shall be filled with an entry having clear, legible figures, being ink or type-written. The Company shall not be held responsible for errors and/or omissions on the part of the bidder in compiling a bid. For each lump sum bid, the bidder shall enter both a written lump sum entry and a numerical lump sum entry on the blanks provided; in the event the written entry amount conflicts with the numeric entry amount, the written entry amount shall prevail.

In the event the **BIDDER'S PROPOSAL** presents entries with summation and the bidder submits entries having obvious or apparent arithmetic errors in the placement of decimal points, either in a unit price entry, in a unit price extension entry, in a entry, and/or in a lump sum entry, then said errors may be corrected by the Company upon confirmation by the bidder.

3.1.2. **Prequalification** The bidder shall be required to affirm on the **BIDDER'S PROPOSAL** form that the bid amount does not exceed its prequalification limit as set by the Company and that the bidder is presently prequalified by the Company to perform this type of work as categorized by the Company in the **ADVERTISEMENT FOR BIDS**.

3.1.3. **Non-Collusion Affidavit Form** The bidder shall complete (signature included and notarized), and shall submit with the bid the **NON-COLLUSION AFFIDAVIT** form supplied by the Company for the project.

3.1.4. **Bid Bond** Required bonds for the respective project will be specified in the **ADVERTISEMENT FOR BID**. The Bid Bond shall be furnished through an agent licensed in the State of Kentucky, or shall be a certified check in favor of the Company, in the amount of five percent (5%) of the bid amount, which shall be forfeited in the event the bidder fails to enter into contract with good and sufficient bond within the time frame stipulated and subject to the terms stated in the **BIDDER'S PROPOSAL** form.

3.1.5. **Documentation of Capability** If directed to do so in the **ADVERTISEMENT FOR BID**, **BIDDER'S PROPOSAL** form, and/or **SUPPLEMENTARY**

**SPECIFICATIONS**, the bidder shall submit, with the bid, documentation of the necessary capital, materials, equipment and facilities to perform the work.

- 3.1.6. **Technical Information** If directed to do so in the **ADVERTISEMENT FOR BID, BIDDER'S PROPOSAL** form and/or **SUPPLEMENTARY SPECIFICATIONS**, the bidder shall submit, with the bid, the required technical information such as design sheets and equipment specification sheets.
- 3.1.7. **Subcontractors List** The bidders shall submit, with the bid, the appropriate forms as directed in the Louisville Water Company Minority and Women Business Enterprise Program Requirements (please see MW-1 – MW-14). The Company encourages the bidders to select certified Minority, Woman, and Handicapped Business Enterprises subcontractors.
- 3.1.8. **Material/Equipment List** If directed to do so in the **ADVERTISEMENT FOR BID, BIDDER'S PROPOSAL** form, and/or **SUPPLEMENTARY SPECIFICATIONS**, the bidder shall submit, with the bid, a list of materials and/or equipment.

### 3.2. **Required Post Bid Documents**

- 3.2.1. **Performance/Payment Bond** Required bonds for the respective project will be specified in the **ADVERTISEMENT FOR BID**. A performance bond and payment bond shall be required from the successful bidder when the Project Manager's estimate exceeds \$250,000. If applicable, the successful bidder shall submit a performance bond and a payment bond, each subject to the terms stated in the **BIDDER'S PROPOSAL** form and in compliance with Article 8 of the **ARTICLES OF AGREEMENT**, upon notification of acceptance of bid.
- 3.2.2. **Certificate of Insurance** Upon notification of acceptance of bid, the successful bidder shall submit an updated Certification of Insurance, said Certificate being in compliance with Article 9, "Insurance", of the **ARTICLES OF AGREEMENT**. During the life of the Contract, the successful bidder as Contractor shall forward renewal Certificates as needed.
- 3.2.3. **Equal Employment Opportunity Documentation** Upon notification of acceptance of bid, the successful bidder shall submit updated editions of the following documents (should updating be needed): (1) an affirmative action plan, if required by law; (2) a completed Company-supplied Equal Employment Opportunity Certification form; and (3) a completed Company-supplied contractor profile Employment Data form. During the term of the Contract, the Company, by means of a "Monthly Jobsite Employment Utilization Survey" letter, may request the successful bidder as Contractor to

reaffirm said certification described in (2) above and update the data described in (3) above; failure or inability to make said certification and/or data available upon request may result in the downgrading of the Contractor's monetary prequalification limit as set by the Company and/or the removal of the Contractor from the Company's list of prequalified bidders.

- 3.2.4. M/WBE Subcontractor Documentation Do not submit the Subcontractor Utilization Payment Report form with the bid. During the term of the Contract, the Contractor shall complete and submit the Subcontractor Utilization Payment Report form with their invoices for this project to show payments made to subcontractors. Also, upon completion of the project, the Company will request of the certified M/WBE subcontractors that participated in the project to complete a different form, listing general information pertaining to type of work, personnel used, compensation from the Contractor, etc. However, applicable forms for company's M/WBE program are required with bid submittal. (Refer to #4, Company Policy and Goals Regarding M/WBE Firms)

#### 4. COMPANY POLICY AND GOALS REGARDING M/WBE FIRMS

The Company and/or its contractors will not discriminate on the basis of race, color, national origin, sex or disability in the award and performance of contracts. These goals are of importance to the Company and have the full support of the Board of Water Works, its President, and its senior line officers. All bidders must complete the appropriate forms as directed in the Louisville Water Company Minority and Women Business Enterprise Program Requirements, pages MW-1 to MW-14.

#### 5. OTHER PROVISIONS

##### 5.1. Bid Tabulation

The Company will mail a completed bid tabulation form to each firm submitting a bid after the Company has taken official action on bid results for the respective project.

##### 5.2. Bid Contact/Project Contact

For any clarifications relating to bidding procurement, the bidder should contact Lynn Humphrey, Purchasing Manager, Louisville Water Company, 550 South Third Street, Louisville, Kentucky 40202, telephone (502) 569-0875. For any technical clarifications relating to the construction aspects of the respective project, the bidder should contact the Project Manager, whose name and telephone number are listed in the ADVERTISEMENT FOR BID and on the title page of the respective project's Contract Document booklet.

**MEMORANDUM  
LOUISVILLE WATER COMPANY**

DATE:

TO: Lynn Humphrey, Process Owner  
Procurement Services

FROM:

RE: **Advertisement for Bid**

---

**Attention Project Managers:** (1) Your specs/contract document must be reviewed by Procurement Services and an e-mail BSO authorization must be received in Procurement Services before your ad will be submitted to the Courier-Journal; (2) Courier Journal requires ads to be submitted by the Friday prior to the desired Wednesday advertisement date. The deadline for the Louisville Defender is Monday for ads to appear in the Thursday edition. *Please note that these dates may change during weeks with holidays.* (3) Five copies of the final specs/contract documents must be forwarded to the assigned Buyer in Procurement Services by date of appearance in the paper. (4) Any addenda issued must be forwarded to the assigned buyer in Procurement Services at earliest possible opportunity.

Please advertise the attached Advertisement for Bid on:

\_\_\_\_\_ in The Courier Journal

\_\_\_\_\_ in the Louisville Defender

Bid Number:

\_\_\_\_\_ *Please contact Procurement Services if you need a Bid #*

Project Number/Name:

\_\_\_\_\_

Contract Estimate: \$ \_\_\_\_\_

Total Project Estimate: \$ \_\_\_\_\_

Numbers to Charge ad to are:

Project# \_\_\_\_\_ Task# \_\_\_\_\_ Org or Cost Center \_\_\_\_\_

*Upon appearance of your ad, the following additional information is needed by Procurement Services by the Monday prior to Bid Opening for your project:*

- *Materials List (if applicable)*
- *Easement Issues Status (if applicable)*

**NON-COLLUSION AFFIDAVIT  
FOR**

**LOUISVILLE WATER COMPANY  
PROJECT #**

\_\_\_\_\_ (bidder's representative) being duly sworn, on his/her oath says that he/she represents \_\_\_\_\_ (bidder) for the construction of the improvements described in the above bid of a Louisville Water Company project of which bid this affidavit is a part; that said bid is submitted in good faith and not as a speculation or to be assigned or relinquished and will be executed and fulfilled by said bidder, according to its terms, if accepted, and according to the plans and specifications for said project; that this bid is made without reference to any other bid; that this bidder has not offered to or received from any person firm, board, commission, trustee or corporations any sum of money or consideration for the making of said bid. That no inducement of any form or character other than that which appears upon the face of the bid will be suggested, offered, paid or delivered to any person in any way or manner, any of the proceeds of the contract sought by this bid; that said bidder has not directly or indirectly made any arrangement, contract or understanding with any other bidder or bidders concerning the amount of said bid, nor has such bidder in any way colluded, conspired, connived or agreed in any manner of form, with any person whomsoever to influence any bid for said contract, directly or indirectly.

Signature of Bidder's  
Representative: \_\_\_\_\_

Representative's Title: \_\_\_\_\_

Date: \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_

Signature of Notary Public: \_\_\_\_\_

County and State: \_\_\_\_\_

My commission expires: \_\_\_\_\_

NC-1

**LOUISVILLE WATER COMPANY  
NON-GRATUITY AFFIDAVIT**

---

being duly sworn, on his/her oath says that (Firm Name) \_\_\_\_\_  
certifies that it has not given, offered to give, nor intends to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the submitted offer. Failure to provide a valid signature affirming the stipulations required by this clause shall result in the rejection of the proposal. Signing the proposal with a false statement shall void the proposal and any resulting contract, and may be subject to legal remedies provided by law.

By: \_\_\_\_\_  
Signature (Title)

\_\_\_\_\_  
Printed or Typed

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

By: \_\_\_\_\_  
Signature (Notary Public)

My commission expires: \_\_\_\_\_

**PAYMENT BOND  
FOR  
LOUISVILLE WATER COMPANY  
PROJECT**

KNOW ALL MEN BY THESE PRESENTS, THAT \_\_\_\_\_  
(hereinafter referred to as "Principal") and \_\_\_\_\_ a Corporation  
organized, created and existing under the laws of the State of \_\_\_\_\_ (hereinafter  
referred to as "Surety"), as Surety are held and firmly bound unto the Louisville Water Company, Louisville, Kentucky  
(hereinafter referred to as "Obligee") in the penal sum of \_\_\_\_\_ dollars  
(\$ \_\_\_\_\_), good and lawful money of the United States of America, for the payment of  
which, sum Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly  
and several, firmly by this agreement.

WHEREAS, the above-named Principal has entered into certain written Contract with the above-  
named Obligee, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, which Contract is hereto attached and  
made a part hereof;

NOW, THEREFORE, the condition of this obligation is such that, if the Principal shall promptly make payments in full  
to all persons, subcontractors, suppliers, mechanics, and workers supplying labor and material in the prosecution of the  
work provided for in the above stated Contract, then this obligation shall be void; otherwise it shall remain in full force  
and effect.

The effective date of this Bond shall be \_\_\_\_\_.

IN WITNESS WHEREOF, the seal and signature of the said Principal is hereto affixed and the corporate seal and the  
name of the said Surety is hereto affixed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Principal: \_\_\_\_\_

By: \_\_\_\_\_

Surety: \_\_\_\_\_

By: \_\_\_\_\_

**PERFORMANCE BOND  
FOR  
LOUISVILLE WATER COMPANY  
PROJECT NO.**

KNOW ALL MEN BY THESE PRESENTS, THAT \_\_\_\_\_ (hereinafter referred to as "Principal") and \_\_\_\_\_ a Corporation organized, created and existing under the laws of the State of \_\_\_\_\_ (hereinafter referred to as "Surety"), as Surety are held and firmly bound unto the Louisville Water Company, Louisville, Kentucky (hereinafter referred to as "Obligee") in the penal sum of \_\_\_\_\_ dollars (\$ \_\_\_\_\_), good and lawful money of the United States of America, for the payment of which, well and truly to be made, we bind ourselves, our heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents.

The condition of the above obligation is such that:

WHEREAS, the above-named Principal has entered into certain written Contract with the above-named Obligee, dated the \_\_\_\_\_ day of \_\_\_\_\_, 200\_\_, a copy of said Contract is being attached hereto and made a part hereof; and

WHEREAS, the above-named Principal has entered in said contract to observe all applicable Federal, State and Local laws, statues and regulations, and compliance with the Kentucky Equal Employment Act (KRS 45.550 through 45.640).

NOW, THEREFORE, if the above-named Principal and any and all agents and employees representing said Principal shall faithfully conform to and abide by, well and truly keep, do and perform each and every, all and singular, the matters, items, specifications, provisions, and requirements contained in said Contract specified, and further shall pay over, make good, and reimburse to the above named Obligee, all loss, damage or other amounts on the part of the Principal under the provisions of this Contract or of applicable laws, statutes, or regulations, then this obligation shall be void, otherwise to be and remain in full force and effect.

The effective date of this Bond shall be \_\_\_\_\_.

IN WITNESS WHEREOF, the seal and signature of the said Principal is hereto affixed and the corporate seal and the name of the said Surety is hereto affixed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

Principal: \_\_\_\_\_

By: \_\_\_\_\_

Surety: \_\_\_\_\_

By: \_\_\_\_\_

Project#/Title :

**Estimated Contract Value:**

- Less than 10,000
- 10,001 to 25,000
- 25,001 to 50,000
- 50,001 to 100,000
- 100,001 to 250,000

- 250,001 to 500,000/Bonds & Prevailing Wage Required
  - 500,001 to 1,000,000/Bonds & Prevailing Wage Required
  - 1,000,001 to 3,000,000/Bonds & Prevailing Wage Required
  - 3,000,001 to 5,000,000/Bonds & Prevailing Wage Required
  - 5,000,001 to 10,000,000/Bonds & Prevailing Wage Required
  - 10,000,001 to 25,000,000/Bonds & Prevailing Wage Required
  - Greater than \$25,000,000 (Provide Range Estimate in \$1million increments below)
- \$ \_\_\_\_\_ to \$ \_\_\_\_\_ /Bonds & Prevailing Wage Required

**Project Manager:**  
Telephone # 569-3600/Ext.

**Buyer:**  
Telephone # 569-3600/Ext.

**Bid Opening Date:**

DATE	ADDENDUM MAILED	COMPANY	MAILING ADDRESS	PHONE NUMBER	FAX NUMBER
		Assoc. Builders & Contractors www.kyanaabc.com	1810 Taylor Ave./Louisville 40213	456-5200	451-1700
		Builders Exchange info@bxlou.com	P.O. Box 5398/Louisville 40255 2300 Meadow Dr., Lou., KY 40218	459-9800	459-9803
		AGC/McGraw-Hill Construction Dodge davina_jacobs@mcgraw-hill.com	1811 Cargo Ct. Louisville, KY 40299	671-1296	671-1298
		AGC/McGraw-Hill Construction Dodge candace_barnes@mcgraw-hill.com	950 Contract St., Suite 100 Lexington, KY 40505-3664	859-425-6630	859-294-5188
		Reed Construction Data rose.harrod@reedbusiness.com	1812 Taylor Avenue Louisville, KY 40213-1539	479-5661	479-5720
		Louisville Enterprise Group hoseam@morethanconsultants.org	2900 W. Broadway, Suite 320 Louisville, KY 40211	775-2566	776-4434
		AGC/McGraw-Hill Construction Dodge rebecca_talbott@mcgraw-hill.com	7265 Kenwood Drive., Ste. 200 Cincinnati, OH 45236	513-345-8200	513-345-8253
		BidTool www.bidtool.net	One Oakbrook Terrace, Suite 510 Oak Brook Terrace, IL 60181	888-506-7613	630-214-3924 <small>(addenda/plans only)</small>

DATE	ADDENDUM MAILED	COMPANY	MAILING ADDRESS	PHONE NUMBER	FAX NUMBER

**AFFIDAVIT OF PAYMENT OF LABOR, MATERIAL,  
MATERIALMEN, SUBCONTRACTORS AND RELEASE OF LIEN**

**FOR**

**LOUISVILLE WATER COMPANY  
BID #**

AFFIANT, as agent for \_\_\_\_\_  
Contractor

being duly sworn, deposes and states that the Contractor has paid in full all of its employees, subcontractors and suppliers providing labor, materials, tools, and equipment to the above-mentioned project, there being no project supplier or subcontractor making any claim for additional payments to affiant's knowledge and belief. A list of all such suppliers and subcontractors is attached hereto.

Further, in consideration of the payment to the Contractor of \$ \_\_\_\_\_  
(contract retainage), Contractor hereby releases the Louisville Water Company (the "Company") from any and all claims Contractor has against the Company as to the above-referenced project, including, but not limited to, lien, contract, and tort claims.

IN TESTIMONY THEREOF, witness the signature of Affiant this \_\_\_\_\_ day of  
\_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Affiant's Signature

Name: \_\_\_\_\_

Title: \_\_\_\_\_

SUBSCRIBED, SWORN TO AND ACKNOWLEDGED before me by

\_\_\_\_\_ on this \_\_\_\_\_ day of  
\_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public

Commission Expires: \_\_\_\_\_

## Responses to Interrogatories

### **PUBLIC SERVICE COMMISSION STAFF'S FIRST SET OF INTERROGATORIES AND REQUEST FOR PRODUCTION OF DOCUMENT TO LOUISVILLE WATER COMPANY**

**7. Describe the differences in right-of-way purchases, construction methods, and maintenance practices when a 36-inch water transmission main parallels a limited access interstate highway and when such main parallels a state highway or local road.**

RESPONSE (McCord):

Louisville Water Company routinely utilizes publicly dedicated Rights of Way to install public water mains to provide potable water service. The water mains are typically installed between the established roadway and the edge of the publicly dedicated Right of Way. When the width between the edge of the improved roadway and the edge of the publicly dedicated Right of Way is insufficient to allow the installation of the water main, easements from the edge of the publicly dedicated Right of Way sufficient in depth and length to allow the installation of the water main are purchased from private property owners. Additional factors which are incorporated into the evaluation of the water main extension route include the width of unutilized publicly dedicated Right of Way, roadways, road and bridge structures, other utilities installed in the publicly dedicated Right of Way, creeks, streams and rivers, endangered flora and fauna, terrain slope, drainage, and general topographic concerns. The purchase of easements is dependent on the needs for installing the water main. There is no difference for purchasing an easement along limited access interstate highways as compared to purchasing an easement along state and local roads.

Construction techniques utilized for the installation of water mains are dependent upon the pipe material, pipe diameter, soils and topographic features. For the purposes of installing the water main from a technical perspective, there is no difference due to its location along a limited access interstate highway as compared with installation along state and local roads. From a logistics standpoint, any traffic control necessary for the installation of the water main will comply with the Manual on Uniform Traffic Control and the requirements set forth by the permitting entity (e.g., Kentucky Transportation Cabinet, County Road Department, municipal road department or municipal public works department).

The purpose for locating water mains along publicly dedicated Rights of Way is to facilitate access for service and maintenance activities. For both limited access interstate highways and state and local roads, access to the water main for service and maintenance remains the same. Such access is coordinated with the entity holding authority for the Rights of Way (e.g., Kentucky Transportation Cabinet, county road department, municipal road department or municipal public works department).

**8. Describe LWC's experience constructing water transmission mains along interstate highway corridors.**

RESPONSE (McCord):

Louisville Water Company has extensive experience in constructing water transmission mains ranging from 16-inch to 60-inch in diameter along and across interstate highway corridors. This includes I-264, I-265, I-64, I-65 and I-71 in Jefferson County, I-65 in Bullitt County, and I-71 in Oldham County. Most recently, LWC installed a 36-inch water main in parallel and crossing the Gene Snyder Express (I-265) in northeast Jefferson County, a 16-inch crossing of I-71 near State Highway 329 in Oldham County, a 16-inch crossing of I-65 near State Highway 480 in Bullitt County and a 16-inch crossing of I-65 near Chapeze Lane in Bullitt County.

**9. Assume Kentucky-American Water Company contracts with LWC for the supply of water to central Kentucky and that LWC constructs a water transmission main from its current facilities to Fayette County to transport the purchased water.**

- a. **Describe the benefits of constructing the water transmission main along an interstate highway corridor.**
- b. **Describe the disadvantages of constructing the water transmission main along an interstate highway corridor.**
- c. **List and describe the permits and approvals necessary to construct a water transmission main along an interstate highway. State the expected time required to obtain each permit or approval**

RESPONSE (McCord):

- a. Describe the benefits of constructing the water transmission main along an interstate highway corridor.

The primary benefit of constructing a water transmission main is it will result in the least footprint on communities along the general route. When the interstate highway was constructed, all previous relocations property acquisition, market place impacts, viewscapes, and the like have been addressed. If the interstate highway route is not used, each county and community through which the water transmission main is installed will be subject to the impacts of construction and long term maintenance of a water transmission main.

- b. Describe the disadvantages of constructing the water transmission main along an interstate highway corridor.

The primary disadvantage of constructing a water transmission main along an interstate highway is access related as the water utilities or contract service providers will the limitations of access imposed

upon them for the duration of the construction and for the long term operation and maintenance of the transmission main.

c. List and describe the permits and approvals necessary to construct a water transmission main along an interstate highway. State the expected time required to obtain each permit or approval

<b>Type of Activity</b>	<b>Permit or Approval</b>	<b>Entity</b>	<b>Time to Obtain</b>
Blue Line Stream Crossings	Approval	Kentucky Division of Water	4-8 Weeks
Blue Line Stream Crossings	Permit	US Army Corps of Engineers	8-12 Weeks
Flood Plain Crossing	Permit	US Army Corps of Engineers	8-12 Weeks
Flood Control Device Crossing	Permit	US Army Corps of Engineers	12-16 Weeks
Kentucky River Crossing	Approval	Kentucky River Authority	8-12 Weeks
ROW Activity	Permit	Kentucky Department of Transportation	2-8 Weeks
ROW Activity	Permit	Municipality Road or Public Works Dept.	1-2 Weeks
ROW Activity	Permit	County Road or Public Works Dept.	1-2 Weeks
Water Main Design	Approval	Kentucky Division of Water	4-8 Weeks
Railroad Crossings	License	Various railroads	16-20 Weeks

There are other matters which do not specifically need a permit or a license that may need an approval or a set of predefined steps to complete before proceeding with any construction: historic sites, archeological sites, conservation districts, unique flora or fauna areas, etc.

**KENTUCKY-AMERICAN WATER COMPANY'S  
DATA REQUESTS TO LWC**

**6. Provide a copy of LWC's standard contract for pipe installation including bid forms, agreements, and specifications.**

RESPONSE (McCord):

Louisville Water Company's Standard Contract Document Technical Specifications for Facilities and Pipeline Construction, 1997, are for the use of distribution system extensions and small transmission type main extensions (e.g., less than or equal to 20-inches in diameter). Attached is a copy of Louisville Water Company's Standard Contract Document Technical Specifications for Facilities and Pipeline Construction, 1997, Bid Forms, and Agreements.

### SUBCONTRACTOR UTILIZATION PAYMENT REPORT

LWC Project Name: \_\_\_\_\_ Project No. \_\_\_\_\_ Bid No. \_\_\_\_\_ Bid Opening Date \_\_\_\_\_

Prime Contractor Name: \_\_\_\_\_ Contract No. \_\_\_\_\_ Original Prime Contract Amount: \_\_\_\_\_

Current Prime Contract Amount: \_\_\_\_\_ Change Order (CO) Nos. Affecting this Payment: \_\_\_\_\_ Date Last CO Approved: \_\_\_\_\_

**The following is to be provided to the Project Manager (PM) for each subcontractor/subsupplier used on this project. This form MUST be submitted with each invoice or payment request.**

Subcontractor/ Subsupplier Company Name & Contact Person	M-MBE W-WBE O-Other	Type of Work, Supply and/or Service <i>(Fixed Price, Materials, Labor, Equipment, and/or Services)</i>	Original Subcontract Amount	(A) Current Subcontract Amount	Payments to Subs (with this report)	(B) Total Sub Payments to Date	(C) Percent of Total Subcontract Amount B/A=C
Company Name:  Contact Name:							
Company Name:  Contact Name:							
Company Name:  Contact Name:							
Company Name:  Contact Name:							
Company Name:  Contact Name:							
Company Name:  Contact Name:							

SIGNATURE OF PRIME AUTHORIZED AGENT: \_\_\_\_\_ TITLE: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE OF PROJECT MANAGER (PM): \_\_\_\_\_ TITLE: \_\_\_\_\_ DATE: \_\_\_\_\_

(Signature of Project Manager (PM) certifies accuracy of Original Subcontract Amount and Current Subcontract Amount)

**TABLE OF CONTENTS**  
**FOR**  
**TECHNICAL SPECIFICATIONS**  
**FOR**  
**PIPELINE CONSTRUCTION**

<u>SECTION</u>	<u>PAGE</u>
1. General Requirements.....	T - 1
1.1 Pre-construction Conference.....	T - 1
1.2 Time of Completion.....	T - 1
1.3 Work Schedule and Payment Schedule.....	T - 1
1.4 Pre-construction Valve Inspection.....	T - 1
1.5 Traffic Control.....	T - 2
1.6 Project Identification Signs.....	T - 2
1.7 Permits and Regulations.....	T - 3
1.7.1 Encroachment Permits.....	T - 3
1.7.2 Crossing of Jefferson County Roads.....	T - 3
1.7.3 Parking Meter Permit.....	T - 3
1.7.4 Soil Erosion and Sediment Control.....	T - 4
1.7.5 Regulation of Confined Spaces.....	T - 5
1.8 Contract Drawings and Specifications.....	T - 5
1.8.1 General.....	T - 5
1.8.2 Combined Specification.....	T - 5
1.8.3 Modifications.....	T - 5
1.8.4 Shop Drawings.....	T - 6
1.9 Daily Materials Installed Form.....	T - 6
1.10 Incidentals Absorbed.....	T - 6
2. Conduct of Work.....	T - 6
2.1 General.....	T - 6
2.2 Safety.....	T - 7
2.3 Cleanliness.....	T - 8
2.4 Defective Work.....	T - 8
2.5 Cooperation.....	T - 8
3. Site.....	T - 9
3.1 Examination.....	T - 9
3.2 Utilities.....	T - 9
3.2.1 General.....	T - 9
3.2.2 Utilities Crossing the Pipeline.....	T - 10
3.2.3 Utilities Parallel to the Pipeline.....	T - 10
3.2.4 Water/Sewer Main Separation.....	T - 11
3.2.5 Water Service Line Depth and Water Service/Sewer Separation.....	T - 11
3.3 Laying Out the Work.....	T - 11
3.4 Stakes.....	T - 11

3.5	Temporary Contractor Facilities .....	T -11
3.5.1	Power.....	T -11
3.5.2	Heat and Enclosures .....	T -12
3.5.3	Light .....	T -12
3.5.4	Water .....	T -12
3.5.5	Toilets.....	T -13
4.	Pipeline Materials .....	T -13
4.1	Pipe and Fittings.....	T -13
4.2	Furnished to the Contractor.....	T -14
4.2.1	Materials.....	T -14
4.2.2	Requisition and Return of Materials .....	T -14
4.2.3	Loading and Unloading Procedures .....	T -15
4.2.4	Equipment .....	T -15
4.3	Furnished by the Contractor .....	T -15
4.4	Breakage/Damage .....	T -16
4.5	Securing Loaded Pipe .....	T -16
4.6	Storage of Polyvinyl Chloride Pipe .....	T -16
5.	Excavation.....	T -16
5.1	Rock Soundings .....	T -16
5.2	Rock Blasting Requirements.....	T -17
5.3	Rock Excavation .....	T -17
5.3.1	Definition of Rock.....	T -17
5.3.2	Trench Dimensions .....	T -17
5.3.3	Payment.....	T -17
5.4	Excavation in a Thoroughfare.....	T -18
5.4.1	Procedure.....	T -18
5.4.2	Twelve-Inch Cutback Requirement .....	T -19
5.4.3	Plating .....	T -19
5.5	Trenching .....	T -20
5.5.1	General .....	T -20
5.5.2	Alignment and Grade .....	T -20
5.5.3	Trench Width .....	T -20
5.5.4	Trench Depth.....	T -20
5.5.5	Minimum Clearances .....	T -21
5.5.6	Safety.....	T -21
5.5.7	Contaminated Soil .....	T -21
5.5.8	Preservation of Landscape .....	T -22
5.5.9	Preservation of Historical Construction Materials.....	T -22
6.	Installation.....	T -23
6.1	Handling Pipe and Appurtenances .....	T -23
6.2	Laying Pipe and Appurtenances.....	T -23
6.3	Boring and Tunneling .....	T -24
6.4	Mechanical and Push-on Joint Assembly .....	T -26

6.4.1	General .....	T -26
6.4.2	Mechanical Joint .....	T -26
6.4.3	Push-on Joint.....	T -27
6.4.4	Field Cut Pipe.....	T -27
6.5	Connection to Existing Mains.....	T -27
6.6	Setting Cast Iron Valves and Fittings .....	T -28
6.7	Polyethylene Wrap.....	T -28
6.8	Installation of Tracing Wire and Identification Ribbon .....	T -29
6.9	Cast Iron Frames and Lids .....	T -30
6.10	Valve Boxes .....	T -30
6.11	Plugging Ends of Pipe.....	T -31
6.12	Thrust Anchors, Counterweights, and Restrained-Joint Hardware.....	T -31
7.	Backfilling Procedures and Tamping.....	T -31
7.1	General .....	T -31
7.2	Bedding .....	T -32
7.3	Initial Backfilling .....	T -33
7.4	Final Backfilling .....	T -33
7.5	Manufactured Sand and By-Product of Trench Rock Excavator.....	T -33
7.6	Shrinkless Fill .....	T -34
8.	Placing Pipe In Service .....	T -34
8.1	Filling and Cleaning the Pipe.....	T -34
8.2	Disinfection .....	T -35
	8.2.1 Methods.....	T -35
	8.2.2 Discharge of Hyperchlorinated Water.....	T -36
8.3	Combined Hydrostatic and Leakage Test .....	T -36
9.	Fire Hydrant .....	T -37
9.1	Materials and Installation.....	T -37
9.2	Drainage Pit.....	T -38
10.	Service Work .....	T -39
10.1	Notification of Customers .....	T -39
10.2	Service Installation.....	T -39
10.3	Tapping Mains .....	T -40
10.4	Laying and Handling Copper Tubing .....	T -41
10.5	Joints .....	T -41
10.6	Setting Meter Vaults .....	T -41
10.7	Pressure Regulators.....	T -42
10.8	Tail Pipes.....	T -42
10.9	Testing the Service.....	T -42
10.10	Relocate Service.....	T -42
10.11	Renew Service.....	T -42
10.12	Transfer Service .....	T -43

10.13	Discontinue Service .....	T -43
10.14	Service Excavation at Main .....	T -44
10.15	Backfill Meter Vault .....	T -44
10.16	Service Work Costs.....	T -45
10.17	Potential Shock Hazard.....	T -45
10.18	Cutting Lead Pipe.....	T -45
11.	Restoration .....	T -45
11.1	Asphalt Materials and Construction Methods.....	T -45
11.2	Concrete Materials and Construction Methods.....	T -46
11.3	Paved Surfaces .....	T -46
11.4	Unpaved Surfaces.....	T -48
11.5	Site Clean Up .....	T -48
12.	Warranty .....	T -49
12.1	Pipeline Materials and Appurtenances.....	T -49
12.2	Paved Surface Restoration .....	T -49
12.3	Unpaved Surface Restoration.....	T -49
12.4	Performance of Warranty .....	T -49
Appendix of Standard Drawings for Pipeline Construction		

# TABLE OF CONTENTS

<u>Item</u>	<u>Page</u>
Advertisement for Bid.....	AD-1
Instructions to Bidders .....	IB-1 - IB-7
Articles of Agreement.....	AA-1 - AA-14
Supplementary Specifications.....	SS-1 – SS
Prevailing Wage Rates.....	ADDENDUM
Subcontractor Utilization Payment Report .....	SU-1
Equal Employment Opportunity Certification Form .....	EEO-1
Employment Data Form.....	ED-1
Release of Lien .....	RL-1
LWC Minority and Women Business Enterprise Program Requirements .....	MW-1 – MW-14
Performance Bond .....	PF-1
Payment Bond.....	PA-1
Non-Collusion Affidavit.....	NC-1
Bidder's Proposal.....	BP-1 – BP-
Appendices	

# TECHNICAL SPECIFICATIONS FOR PIPELINE CONSTRUCTION

## 1. GENERAL REQUIREMENTS

### 1.1 Pre-construction Conference

Following the awarding of this project, a pre-construction conference will be held. Attendance will include representatives from the various utilities, government agencies, and the Company. It is highly recommended that the foreman assigned to this project be present.

### 1.2 Time of Completion

Completion time on this project shall be as defined in the **BIDDER'S PROPOSAL** form and in the **ARTICLES OF AGREEMENT**.

Also, when figuring the number of days for which liquidated damages will be assessed, those days following the stated contractual date of completion which are holidays observed by the Louisville Water Company, and those days which experience rain of one-half inch or greater, will not be counted.

### 1.3 Work Schedule and Payment Schedule

The Contractor shall furnish to the Project Manager a work schedule to be approved prior to construction. The schedule shall be in agreement with the beginning and completion dates entered in the **BIDDER'S PROPOSAL** form.

Also, the Contractor shall furnish a payment schedule that lists the project cost for: pipe installation, fire hydrant installation, service installation, street restoration, sidewalk restoration, site clean-up, etc. The amount of work accomplished for each item will determine the certified amount of contract, and thus, the monthly payment to the Contractor.

The work schedule and the line item payment schedule will be discussed, finalized, and approved during the pre-construction conference to be held after award of the contract.

### 1.4 Pre-construction Valve Inspection

Prior to the beginning of construction, the Contractor shall be responsible for locating and inspecting all existing valves associated with the work to

be done. Specific valves and locations are shown in the table and on the valve cards which are a part of the **SUPPLEMENTARY SPECIFICATIONS**. Inspection work to be done on these valves shall be included in the Contractor's base bid, and shall consist of the following:

- A. Locate the valve in the field. Valve boxes that are paved over or buried shall be uncovered and made accessible.
- B. Inspect keytubes and operating nut. Keytubes shall be cleared of debris and the operating nut made accessible.
- C. Valve boxes (round tops) and lids shall be raised to grade where necessary.

Any valve determined by the Company to be inoperative shall be excavated and repaired or replaced by the Contractor as deemed necessary by the Project Manager. Unit costs shall be as submitted by the Contractor in the **BIDDER'S PROPOSAL** form.

#### 1.5 Traffic Control

Wherever the excavation is in paving, the Contractor shall so conduct his operations that at least one lane traffic is kept open at all times. Where the excavation is performed in an intersection, the work shall be completed in one work day, including backfilling and temporary bituminous pavement; temporary paving restoration shall be adequately maintained until permanent pavement is placed.

Traffic control on State streets shall be in accordance with the "State Uniform Traffic Control Manual."

Traffic control on City streets shall be in accordance with the City of Louisville Manual "Traffic Controls for Street Construction and Maintenance Operations" on file at the offices of the Louisville Water Company.

Traffic control on County streets shall be approved by the County Engineer.

Specific signing and traffic control is incidental to this project and will be set up at the pre-construction conference with representatives from the appropriate agencies. No extra payment will be made for placement of these traffic controls.

#### 1.6 Project Identification Signs

The Contractor is required to supply and install a metal sign on each end of the project limits. The sign shall be 30"x 30" in size with medium dark blue letters on a white reflective sheeting, Scotchlite by the 3M Company or approved equal. Figure showing wording and diminishing appears in the Appendix at the end of this **TECHNICAL SPECIFICATIONS**.

## 1.7 Permits and Regulations

### 1.7.1 Encroachment Permits

Applicable permits shall be obtained by the Company from the City of Louisville Department of Public Works, Jefferson County Public Works Department, and Kentucky Department of Highways for installing water mains in public thoroughfares. The Contractor shall coordinate his time schedule for performing this work with the Project Manager in order that the appropriate authority can be notified of the progress of construction. Special attention is directed to the working hours as specified by any of these traffic control departments in their respective permit.

### 1.7.2 Crossing of Jefferson County Roads

With respect to all roadways under the jurisdiction of the Jefferson County Public Works and Transportation Department, any and all water main crossings, fire hydrant crossings, and/or service crossings shall be bored, jacked, or tunnelled as specified within these Contract Documents. Any alternation(s) to the above shall require written approval from both the Louisville Water Company and the said County Department prior to the work being performed. Any additions and/or deletions in roadway bores/jacks/tunnels from those included in the project's scope of work shall require compensation adjustment in accordance with the **BIDDER'S PROPOSAL** form's Supplementary Unit Prices (if applicable) or with Article 17, "Alterations of Materials and/or Work" of the **ARTICLES OF AGREEMENT** (if said Supplementary Unit Prices are not applicable).

### 1.7.3 Parking Meter Permit

The Contractor shall arrange for and pay for a permit as required by City of Louisville Ordinance No. 394 for the bagging of all parking meters affected by the construction. Issuance and enforcement are administered by the City of Louisville. Information may be obtained at the following address. All costs shall be included in the Contractor's base bid.

City of Louisville  
Department of Public Works  
Division of Engineering  
Room 217, City Hall  
Louisville, Kentucky 40202

#### 1.7.4 Soil Erosion and Sediment Control

The Contractor shall abide by and shall arrange for and pay for any and all permits involving the Kentucky Division of Water regulations pertaining to erosion and sediment control requirements as administered by the Louisville and Jefferson County Metropolitan Sewer District (MSD). The Contractor shall comply with the applicable provisions of KRS Chapters 220 and 224 of the State Water Pollution Control Laws and other applicable statutes relating to the prevention and/or abatement of water pollution. Projects involving disturbed areas of more than five (5) acres shall require of the Contractor to submit a "Notice of Intent" Letter to the Kentucky Division of Water, as well as an "Erosion and Sediment Control" plan submitted to MSD for MSD's approval. In any event, regardless of the size of the project, the Contractor shall: exercise every reasonable precaution at all times to prevent water pollution by the erosion and disposition of sediment in streams, lakes, and reservoirs; conduct and schedule operations so as to avoid or minimize the muddying or siltation of areas adjacent to the construction site including streets, storm sewers, vacant lots, etc.; and not leave partially completed areas of work in a manner that will contribute to erosion during the period in which work is suspended.

For each stream crossing (a "stream" being defined as a so-called blue-line stream, either solid or broken, as shown on the United States Geological Survey (USGS) quadrangle map), the Louisville Water Company shall apply for a construction permit, or for an exemption thereto, from the Kentucky Division of Water. In any event, the Contractor shall: utilize adequate and environmentally-responsible construction practices, placing silt control prior to the start of construction and maintaining it until vegetation has been established; revegetate all disturbed areas upon completion of construction; maintain at least 3-1/2 feet of cover over the top of pipe with respect to the stream bed elevation; and obtain approval from MSD, prior to the start of construction, of an "Erosion and Sediment Control" plan.

#### 1.7.5 Regulation of Confined Spaces

With respect the entry of and/or working within confined spaces, the Contractor shall abide by the KOSHA Standards referenced by 803 KAR 2:300 thru 2:320 for General Industry and 803 KAR 2:240 thru 2:423 for Construction Standards, plus any and all additional related regulations required by the Commonwealth of Kentucky. For questions or concerns relating to this matter, the Contractor shall contact the KOSHA Standards Interpretation (phone: (502) 564-2778).

## 1.8 Contract Drawings and Specifications

### 1.8.1 General

The work shall be done in accordance with these specifications and the project drawings. Drawings and specifications are intended to be cooperative. Where work is called for in one and not in the other, it shall be furnished as though in both.

Statements contained in these **TECHNICAL SPECIFICATIONS** that conflict with statements contained in other Company-produced documents (such as the **ADVERTISEMENT FOR BID, INSTRUCTIONS TO BIDDERS, BIDDER'S PROPOSAL** form, **ARTICLES OF AGREEMENT, SUPPLEMENTARY SPECIFICATIONS**, and **PROJECT DRAWINGS**) for a particular project shall be superseded by those statements contained in the other Company-produced documents.

### 1.8.2 Combined Specification

This specification discusses the installation of ductile iron pipe, polyvinyl chloride pipe, and gray and ductile iron appurtenances. The type of pipe to be installed, ductile iron or polyvinyl chloride, is specified in the **SUPPLEMENTARY SPECIFICATIONS**. The sections "PIPELINE MATERIALS", "INSTALLATION", and "SERVICE WORK" reference pipe of either type. Whenever pipe of one type is referenced, the specification pertains to this type only. When the type of pipe is not distinguished, the specification pertains to both.

### 1.8.3 Modifications

In case of modification, alterations, or changes of any kind in the drawings and specifications, the order for such changes shall come only through the Project Manager, and when such changes affect the cost of the work, they shall be made in writing and executed only when such order is given. The Contractor shall keep itself fully informed as to special requirements, and in the absence of

drawings or written instructions, it shall obtain from the Project Manager such drawings or written instructions before proceeding with any work that affects or is affected by such requirements.

#### 1.8.4 Shop Drawings

When shop drawings are submitted to the Project Manager for approval, it is understood that such approval is to be of design of general layout only, and does not relieve the Contractor of this responsibility for proper fit or for complying with the contract plans and specifications unless specifically so stated.

#### 1.9 Daily Materials Installed Form

The Contractor shall maintain the Daily Materials Installed forms supplied by the Company as a record of the pipe, fittings, and valves installed each day, and shall provide same to the company field representative daily. Pipeline materials shall be listed on the form in the same sequence as installed.

#### 1.10 Incidentals Absorbed

All the work and material covered by these specifications and the project drawings; any work or material that may be reasonable from the information given on the drawings or in the specifications, or that is necessary to complete the work at the obvious intent; and any tools, appliances, or structures that may be constructed by the Contractor for carrying out the work, shall be furnished by the Contractor and the cost of all such material and work shall be included in, and absorbed by, the price(s) and amount(s) mentioned in the Contractor's base bid.

## 2. CONDUCT OF WORK

### 2.1 General

The Contractor shall notify the Project Manager or his authorized representative 24 hours prior to starting any work on the project.

The Contractor shall notify the Project Manager, at least two working days in advance, of any and all non-routine scheduling of work and/or of temporary work suspensions (such work after normal working hours, work on weekends, no work for a few days, etc.).

The Contractor shall carry on the work at all times with the greatest reasonable rapidity, as directed by the Project Manager and/or his/her authorized representative, who shall have at all times access to the work

which shall be directly under their control. The Contractor shall provide safe, sufficient, and proper facilities at all times for the inspection of the work by the Project Manager and/or his/her authorized representative.

Unless otherwise directed, the Contractor shall complete each block of water main installation or, in the absence of intersecting streets, every 400 feet of water main installation before proceeding. This includes chlorination, pressure testing, service work, and permanent restoration of all areas effected by the construction.

Except in cases of emergency, the Contractor shall not operate any valve without the direct supervision of the Project Manager or Company field representative. In an emergency, the Company field representative or Company radio room shall be immediately notified by the Contractor.

The Contractor shall use such methods and equipment in the performance of the work as, in the opinion of the Project Manager, will secure a satisfactory quality of work. The work throughout shall be constructed in a substantially skillful manner.

The Contractor agrees to employ only competent workers on the project. Any worker incompetent or disorderly shall, upon the order of the Company, be removed and not re-employed on the project except with consent of the Company.

The Contractor agrees that it will sustain all losses or damages arising from the action of the elements or the nature of the work to be done under these specifications.

The Contractor's responsibility for the work shall commence when the construction work is started, and shall not end until final acceptance is given by the Chief Engineer of the Louisville Water Company. The Contractor shall assume all responsibility for injury or damage from any cause whatsoever, and shall rebuild, repair, restore, and make good at his/her expense, all injuries or damage to the present Louisville Water Company facilities and properties. Nothing contained herein shall alter or relieve the Contractor of the responsibility to complete the project as specified or to correct or replace any defective work or materials.

## 2.2 Safety

It is required that all job sites be in compliance with all applicable safety standards and regulations set forth by the Kentucky Labor Cabinet pursuant to KRS Chapter 338 and other applicable statutes, as well as with the applicable safety standards and regulations set forth by the United States Government and its agencies.

The Contractor shall place and maintain such barriers and caution lights as will comply with all laws, statutes, ordinances, acts, and regulations of the City, County, and State in which the work is to be performed, and shall secure all permits and pay all fees for permits and inspections required thereby to effectively prevent any accidents in consequence of its work, storage of materials, or appurtenant operations. The Contractor shall be liable for all damages occasioned in any way by its act or neglect or that of its agents, employees, or workers. It shall hold the Louisville Water Company harmless from any liability for damages, from injury of its employees or others during the progress of the work.

### 2.3 Cleanliness

The Contractor shall from time to time remove all dirt and rubbish resulting from its operations, and shall keep the premises neat and tidy. When its work is complete, it shall at once remove from the premises all tools and machinery belonging to it and all rubbish in connection with the work and render the premises clean and free from all obstructions, delivering the work at completion whole, clean, tight, and ready for use, with the grounds in a neat and presentable condition.

### 2.4 Defective Work

Defective work or material may be condemned by the Project Manager at any time before the final acceptance of the work. Condemned work shall be immediately taken down by the Contractor and rebuilt in the proper manner. Condemned materials shall be immediately removed. Failure or neglect on the part of the Company to condemn bad or inferior work or materials shall not be construed as an acceptance of same.

### 2.5 Cooperation

The Contractor shall cooperate with the City of Louisville, Jefferson County, Kentucky Department of Highways, the Louisville Water Company, other utilities, and other Contractors to cause as little interference as possible, to avoid inconvenience and delay, and to facilitate prompt completion of the work. The Contractor shall make special arrangements with the Company for valving off mains in the case of each connection or change in existing mains, and will conduct the work to cause the shortest possible interruption of service.

## 3. SITE

### 3.1 Examination

The Contractor to whom the contract is awarded is expected to have visited the site, to have fully informed itself as to existing conditions and limitations, including nature of the soil and depth of rock, to have made all necessary investigations, and be thoroughly familiar with difficulties involved in the completion of all work under the contract requirements. The Contractor shall examine the specifications and the construction drawings, and shall exercise its own judgement as to the nature and amount of work to be done. Failure or omission on the part of the Contractor to make the necessary examinations and investigations shall not be accepted as an excuse for failure or omission on its part to fulfill, in every detail, all of the requirements of the contract. The pipelines shall be installed throughout the public rights-of-way or in easements as indicated on the drawings. Generally, all work must be confined to the public way or easement provided; however, the Contractor may make arrangements for more operating room at its own expense and responsibility, with no involvement of the Louisville Water Company. Otherwise, the Contractor shall conduct its operations in a manner that will not interfere with adjacent property owners.

### 3.2 Utilities

#### 3.2.1 General

The Louisville Water Company's engineers have endeavored to locate sub-surface obstructions from available records, and such structures are shown on the plans. The Louisville Water Company cannot vouch for the accuracy of the information there shown, although it has undertaken to present available data. The plans do not show the size or location of services. Wherever the Contractor deems it necessary to determine the exact location of existing pipe, valve, or other underground structures, the Contractor may make any examinations that it may determine desirable in advance of the work and no added compensation will be paid. Only in the event that the Project Manager by written order directs the Contractor to make additional exploration and excavation will extra compensation be allowed.

The Contractor's attention is directed to the Utility Protection Center (1-800-752-6007), which has been established to provide accurate locations of below-ground utilities. The Contractor shall notify the Utility Protection Center 48 hours in advance of any construction on this project.

#### 3.2.2 Utilities Crossing the Pipeline

In excavating trenches and laying pipe, where any existing utilities

including water pipe, sewer pipes, inlets and drains, gas pipes, electric conduits, telephone conduits, service connections from these utilities, trolley tracks used for cathodic protection, traffic signal loop detector system or street light system, cross the trench, they shall be protected, supported, and maintained in service and restored to the condition in which they were found, all at no additional cost to the Company. Where because of location or grade, such utilities cannot be replaced to occupy their original location, they shall be changed at no additional cost to the Company and as directed by the Project Manager to accomplish their original purpose with adequate provision for drainage over or under the pipe as circumstances require. Where any utility facility, including service connections, is touched or endangered by the work, the utility management shall be notified by the Contractor, and the Contractor shall cooperate with the utility and pay the cost of protection and repair if damaged. The Contractor shall protect all abandoned trolley tracks; contact Cathodic Protection Department of Louisville Gas and Electric Company (566-4501, 4502, 4503, or 4591) prior to the repair of any cut or damaged rail. Repair, if required, shall be as directed by Louisville Gas and Electric Company.

### 3.2.3 Utilities Parallel to the Pipeline

Where utilities are existing parallel to the water main and at a locating which will interfere with its installation, they shall be handled as follows:

A. Gas, sewers, telephone, or electric facilities shall be gently uncovered, and personnel from the pertinent utility shall remove its facility after accomplishing a temporary hook-up to prevent loss of service. After the water main has been placed, the utility line will be reinstalled near its original location and grade by the utility personnel, and the Contractor will complete the necessary backfill.

The affected utility must be notified at least five days in advance of the time necessary to do the work. The cost of temporary hook-up and any charges from the utility will be paid by the Louisville Water Company.

B. Existing water mains shall be gently uncovered and removed by this Contractor after temporary service has been established by the Louisville Water Company crews. When the proposed main has been placed, the existing main shall be reinstalled by this Contractor as detailed on the drawings in the same trench with the proposed main. Louisville Water Company crews will then

reinstall services after which backfilling shall be completed by this Contractor.

#### 3.2.4 Water/Sewer Main Separation

Water mains shall be installed at a minimum of ten (10) feet horizontally from any existing or proposed sewer main or sewer manhole; measured from the outside diameters. ("Sewer" is defined as sanitary, storm, and/or combined.) When crossing over or under a sewer main, the water main shall maintain 1.5 feet vertical separation. When the 1.5 feet vertical separation cannot be maintained, the water main must be encased for a distance not less than five (5) feet on either side of the point of crossing. Only in the event that the Project Manager directs the Contractor by written order may changes be made to these minimum separations.

#### 3.2.5 Water Service Line Depth and Water Service/Sewer Separation

Water service lines shall be installed at the standard depth of 42 inches. Service lines crossing over or under a sewer shall maintain a minimum separation of: 6" if the water service line is above the sewer; and 18" if the water service line is below the sewer.

### 3.3 Laying Out the Work

The exact location of the work will be fixed by lines and elevations furnished by the Project Manager with the assistance of the Contractor. The Contractor shall layout its own work, lines, measurements, bench marks, levels and grades, subject to the checking and directions of the Project Manager.

### 3.4 Stakes

The Contractor shall furnish and set all stakes necessary in laying out the location of lines and grades, shall protect all stakes by suitable guard stakes, and shall be responsible for maintenance of all stakes after set.

### 3.5 Temporary Contractor Facilities

#### 3.5.1 Power

The Contractor shall arrange and pay for all power required for construction purposes.

#### 3.5.2 Heat and Enclosures

The Contractor shall furnish at its own expense, all temporary heat and/or enclosures that may be deemed necessary.

### 3.5.3 Light

The Contractor shall provide and pay for temporary electric light necessary for the execution of the work. This will include all necessary wiring, fixtures, and electric bulbs. Torches or other sources of light which cause damage by fire or by smoke shall not be used.

### 3.5.4 Water

The Contractor shall purchase water from the Company for use in construction operations. The Contractor shall include the cost of Temporary Water Service, and cost of water purchased, in the base bid.

Water used by the Contractor or Company for disinfection, flushing, pressure testing, and leakage testing will be supplied by the Company.

Temporary Service will be made available only on special permit upon application to the Service Installation Office. Where practical, such temporary a service will be attached to existing service lines or appurtenances to the water system.

Where permanent facilities do not exist in the vicinity of the desired temporary service, metered service may be obtained by means of a meter assembly connected to a specific fire hydrant. Each Temporary Service Permit will require a non-refundable service charge and a daily fee, the amount of each established annually by the Company. Where a fire hydrant meter assembly is required, an additional refundable deposit must be made covering the value of the meter and fittings to be used. This refundable deposit will be returned to the Contractor when the meter and fittings have been returned, less a deduction for unbilled water usage, and less a charge for any damages to the meter assembly. The Contractor is responsible to protect fire hydrant meter assemblies from loss and theft.

Each Temporary Service Connection will be accomplished by Company personnel, and where practical should be adjusted only by Company personnel. It is noted, however, that to protect from theft or freezing weather, fire hydrant meter assemblies must be dismantled when not in use. Some special uses as road buildings require that the Contractor move the fire hydrant meter assembly. In such instances, it is the responsibility of the Contractor to

properly protect the fire hydrant meter assembly, and to ensure that proper replacement techniques be applied, including placement of gasket to prevent water loss upstream of the meter. Fire hydrants used will be inspected upon termination of the Temporary Service Permit, and the customer shall be billed for any damage to the fire hydrant(s).

Temporary Service Permit meters will be read periodically and billed monthly at the regular published water rate and sewer charge schedule applicable for the location and size of meter involved. If a fire hydrant meter assembly has been removed from the designated fire hydrant for any reason, it shall be the responsibility of the Contractor to contact the Customer Relations Supervisor prior to the scheduled meter reading date indicated on the Temporary Service Permit to inform said Supervisor of the location of the meter.

Should a Temporary Service Connection become damaged for any reason, the Contractor should contact the Customer Relations Supervisor for arrangement of repairs.

#### 3.5.5 Toilets

The Contractor shall provide in the vicinity of the work at locations satisfactory to the Company, and maintain in a sanitary condition, suitable temporary toilets for the use of the workers. Upon completion of the work, the temporary toilets shall be removed and the premises left in a sanitary condition. The temporary toilets shall be satisfactory to the Louisville and Jefferson County Board of Health.

### 4. PIPELINE MATERIALS

#### 4.1 Pipe and Fittings

Pipe to be furnished by the Company for this construction will be as specified in the **SUPPLEMENTARY SPECIFICATIONS**, either polyvinyl chloride pipe or cement-lined ductile iron pipe, each having push-on joints. Fittings will be ductile or gray cast iron with mechanical joints.

#### 4.2 Furnished to the Contractor

##### 4.2.1 Materials

All polyvinyl chloride or ductile iron pipe, bends or elbows,

reducers, adapters, restraining tie rods, sleeves, rubber gaskets and other joint materials, tee bolts and gaskets for mechanical joint and special fittings, gate valves, butterfly valves, air relief valves of all sizes and descriptions including corporation cocks, valve boxes, casing pipe, polyethylene wrap, cleaning pigs, and fire hydrants will be furnished by the Company. The Contractor shall requisition and haul, on appropriate vehicles, these materials from the Company warehouse to the points of their respective installation. As referenced in the current edition of the Company's "Process for Jobsite Delivery" Document, a copy of which is available from the Project Manager, pipe delivery from the pipe manufacturer to the jobsite is available if the Contractor makes arrangements as stated in said Document.

#### 4.2.2 Requisition and Return of Materials

The Contractor shall requisition and return materials on the forms provided by the Company, and shall account for or promptly return all materials so requisitioned. Any unused materials shall be returned within five (5) working days after the date of completion of the work as specified by the Company field representative. The cost of any unused materials not returned to the warehouse by this date shall be billed to the Contractor.

Below is a list of guidelines to draw or return materials from the Company's Allmond Avenue warehouse:

- A. Call (502) 569-3600, extension 3633 to make an appointment with the Warehouse. (Appointments are scheduled for 30 minutes in length.) At this time, fax a copy of the materials list at 375-2624.
- B. Appointments, including standing appointments, will be scheduled on a first-come first-served basis. Appointments are not required for emergency situations; however, a telephone call is required.
- C. Issues and returns would be considered equal in regard to scheduling.
- D. Warehouse office hours are 7:30 a.m. - 4:00 p.m., Monday thru Friday (except Company holidays). Appointments are scheduled from 8:00 a.m. - 2:30 p.m. (However, summertime appointments are scheduled from 7:30 a.m. - 1:30 p.m.)

- E. All returned material must be in the same condition as it was when issued - clean and with all accessories. Returns of dirty, corroded, and/or rusted material, and/or fittings missing accessories, shall not be accepted.

#### 4.2.3 Loading and Unloading Procedures

Refer to Article 10, "Pipe and Pipe Appurtenances Furnished by the Louisville Water Company", of the **ARTICLES OF AGREEMENT**.

#### 4.2.4 Equipment

For pressure and leakage testing, the Company shall issue a test pump with kit to the Contractor. The Contractor is to: notify the Valve Shop (502) 569-3600, ext. 2766, at the Warehouse at least two days in advance of the day of intended use; pick up the test pump/kit between the hours to 7:30 a.m. and 3:30 p.m.; have the test pump/kit for 48 hours at no charge (Saturdays and Sundays are excluded from the allowed time frame); and return the test pump/kit to the Warehouse within 48 hours of pick-up. If outstanding for more than two days, beginning on the third day, a \$50.00/day rental fee will be charged the Contractor; this fee shall be waived only if the Company inspector notifies the Warehouse Office or the Valve Shop at the Warehouse of special circumstances. The Contractor shall be held responsible for the test pump and all test kit contents, and shall be invoiced for all cleanup and/or repair costs.

The Company does not loan or lease hoses and/or tools, including tapping machines.

#### 4.3 Furnished by the Contractor

All materials and equipment other than those mentioned in Section 4.2.1 above, including materials for concrete, plain or reinforced, small screwed piping in connection with the air relief valves, all sewer pipe, replacement materials for destroyed culverts or other improvements, paving materials, backfilling materials, sheeting and any other materials not herein mentioned but required to complete the work, shall be furnished by the Contractor.

#### 4.4 Breakage/Damage

The Contractor shall reimburse the Company for any pipes, fittings, or other materials so furnished that may be damaged, broken, and/or allowed

to deteriorate while handled by him/her during the progress of the work or while in his/her possession.

#### 4.5 Securing Loaded Pipe

The Contractor shall be responsible for inspecting and securing all loads in accordance with the current edition of the "Federal Motor Carrier Safety Regulations", a copy of which is on file at the Allmond Avenue Warehouse.

- A. For PVC pipe, only nylon straps shall be used to secure the load.
- B. For iron pipe and steel pipe, chains and/or nylon straps shall be used to secure the load.

#### 4.6 Storage of Polyvinyl Chloride Pipe

When storing polyvinyl chloride pipe, caution should be exercised to avoid compression, damage, or deformation to the pipe, including the bell ends. Insure that the weight of the upper units does not cause deformation to the lower units. When storage with exposure to direct sunlight occurs, polyvinyl chloride pipe shall be covered with a light-colored material such as a tarpaulin, allowing for adequate air circulation above and around the pipe to prevent excessive heat accumulation.

### 5. EXCAVATION

#### 5.1 Rock Soundings

The Louisville Water Company does not know or pretend to know, nor does it undertake to state, the nature of all materials which will be necessary to excavate, in order to construct the work contemplated herein. The Contractor is advised to make rock soundings or subsurface investigations as he/she may see fit. The Contractor shall assume all risks arising from, or out of, the nature of all forms of materials necessary to be excavated, except as otherwise specified.

#### 5.2 Rock Blasting Requirements

All blasting for excavations shall be conducted by a blaster licensed in the State of Kentucky. Blasting will be permitted only after securing the approval of the Project Manager and only when proper precautions are taken for the protection of persons or property. Any damage caused by blasting, including pavement damaged and/or raised, shall be repaired by the Contractor at his/her expense. The Contractor shall abide by all Federal, State, and Local laws and regulations regarding the storage and

use of blasting materials. The hours of blasting will be fixed by the Project Manager. A blasting log must be kept and a copy furnished to the Company.

### 5.3 Rock Excavation

#### 5.3.1 Definition of Rock

Rock, for the purpose of this contract, shall mean boulders, pieces of concrete or masonry exceeding 300 pounds in weight, and solid ledge rock (usually limestone) which, in the opinion of the Project Manager, requires: drilling and blasting; wedging and blasting; wedging, sledging, or barring; or breaking up with a power operated hand tool for its removal.

No soft or disintegrated rock or shale; no loose, shaken, previously blasted rock or shale; no broken stone in fills or elsewhere (which can be removed with a hand pick or power operated excavator or shovel); and no rock or shale exterior to the minimum limits of measurements allowed which may fall into the excavation, will be measured or allowed. No part of the existing pavement system, including concrete or stone subbase, will be considered as rock. Any buried pavement system, other than the existing pavement system, will be considered as rock if it meets the criteria of rock stated above.

#### 5.3.2 Trench Dimensions

Trench rock excavation shall be based on a trench width of nine inches wider than the nominal diameter of the pipe on each side of the trench and a trench depth of six inches below the outside bottom of the pipe.

#### 5.3.3 Payment

The Contractor is directed to include the cost of the estimated quantity of rock excavation, as specified in the **SUPPLEMENTARY SPECIFICATIONS**, in the base bid as submitted on the **BIDDER'S PROPOSAL** form. When deviations from this estimated quantity are certified by the Project Manager, the base bid shall be adjusted by the unit price for rock excavation in the **BIDDER'S PROPOSAL**. Bedding material and backfilling shall be as specified in Section 7 "BACKFILLING PROCEDURES AND TAMPING" and shall be included in the unit price for rock excavation.

In the event rock is excavated by means of an excavator and/or a trench rock excavator, then no unit price adjustment shall be made to the lump sum base bid amount. In the event rock is excavated by means of blasting, then the applicable Supplementary Unit Price entry shall be used to adjust the lump sum bid amount based upon the difference between the actual quantity of rock excavation by means of blasting and the estimated quantity of rock excavation by means of blasting as stated in the **SUPPLEMENTARY SPECIFICATIONS**; said entry being a maximum of \$60.00. In the event the Company specifies rock to be excavated by mechanical means, then the applicable Supplementary Unit Price entry shall be used to adjust the lump sum bid amount based upon the difference between the actual quantity of rock excavation by mechanical means and the estimated quantity of rock excavation by mechanical means as stated in the **SUPPLEMENTARY SPECIFICATIONS**; said entry being a maximum of \$125.00.

#### 5.4 Excavation in Thoroughfare

##### 5.4.1 Procedure

Wherever the excavation is in paving, whether in the city, outside the city, or in parking lots, the Contractor shall so conduct his/her operations that at least one lane of traffic is kept open at all times. Where the excavation is performed in a travelled lane, the trench shall be made safe during non-working hours by installing backfill and temporary bituminous pavement, backfill and concrete subbase, or plates (see "Plating" Section 5.4.3). Where the excavation is performed in an intersection, the work shall be completed in one work day, including backfilling and temporary bituminous pavement. Temporary paving restoration shall be adequately maintained until permanent pavement is placed. Traffic warning signs shall be placed and maintained on the thoroughfares being crossed, in accordance with the applicable agency as described in "Traffic Control" (Section 1.5).

##### 5.4.2 Twelve-Inch Cutback Requirement

The Contractor shall make two pairs of straight paving cuts of uniform width: the first pair being along the edges of the anticipated trench location, to be performed prior to excavating the pipe trench; and the second pair being along the anticipated twelve-inch cutback locations, to be performed upon completion of trench backfill placement up to the subbase bottom elevation and

prior to subbase placement.

Sawcuts shall be of sufficient penetration of the pavement base to insure straight edges during pavement removal. Irregular edges shall be sawcut to provide straight edges at a uniform width.

#### 5.4.3 Plating

The Contractor shall provide plates recessed flush with the pavement for any excavation in a travelled lane. See Typical Recessed Plate Detail on the pertinent Pavement Restoration Drawing in the Appendix of Drawings. Any lane that is open to the traffic at any time during the day is defined as a travelled lane. The Contractor shall also provide recessed plates where required by the Project Manager and as described in the SUPPLEMENTARY SPECIFICATIONS. Otherwise, surface mounted plates, properly secured to pavement, shall be provided. Recessed and surface mounted shall have a minimum thickness of one inch, and shall be placed on a minimum bearing area of one foot of pavement bordering the perimeter of the excavation.

Whenever plate pins are used with the plates, the Contractor shall mechanically attach the pins to the plate by a method approved by the Project Manager.

Beginning January 1, 2000, ALL plates, whether or not in a travelled lane, are to have 45-degree bevelled edges along the entire perimeter.

If in a State-maintained roadway, ALL plates, whether or not in a travelled lane, are to be recessed from November 1st thru March 31st, so as to minimize the potential hazards to snow removal vehicles.

### 5.5 Trenching

#### 5.5.1 General

The Contractor shall make all excavations for pipe, blow-off connections, valves and vaults, etc. which may be required for this project. All excavations shall be backfilled or plated overnight.

#### 5.5.2 Alignment and Grade

The trench shall be excavated to the alignment and depth required and only so far in advance of pipe laying as the Project Manager

shall permit. All pipe shall be laid and maintained to the lines and grades shown on the plans.

#### 5.5.3 Trench Width

The trench width shall be as shown as narrow as practicable to permit the pipe to be laid and jointed properly and for the backfill to be placed and compacted. Vertical sides are desired where the nature of the excavated material and depth of trench will permit. The maximum clear width of trench shall not be more than 1-1/2 feet greater than the nominal pipe diameter, and this trench width shall be the pay width for any items of work for which compensation is made where trench width is a factor in computing the value of work done.

#### 5.5.4 Trench Depth

The pipe trench shall be excavated to such depth as to provide for six inches (6") of depth under and 42 inches (42") of cover over the outside of the pipe barrel. Unless otherwise specified, the trench shall have a flat bottom conforming to this grade. The trench bottom shall be so excavated at the bells, so that the barrel of the pipe will have a bearing for its full length. Any part of the trench excavated below grade shall be backfilled to grade with the same backfill material used to bed the pipe, pit run sand or Dense Graded Aggregate, or other material approved by the Chief Engineer, and compacted to ninety percent of Modified Proctor as required in "BACKFILLING PROCEDURES AND TAMPING" (Section 7). Unstable soil material shall be excavated from the trench, removed from the site, and backfilled and compacted as described above.

Depth of cover beyond that required above shall be provided where indicated on the drawings with no additional compensation. Variations from these required depths will be allowed only on written authority from the Project Manager.

#### 5.5.5 Minimum Clearances

Boulders, large stones, and rock (including shale) shall be removed to provide a clearance of at least six inches below all parts of the pipe, valves, or fittings and to provide a clear width of at least nine inches (9") on each side of all pipe and appurtenances. Bell holes of ample dimension shall be dug to permit jointing to be made properly and to insure that the pipe is evenly supported throughout

in length rather than on bells or couplings.

#### 5.5.6 Safety

Wherever necessary, to prevent caving during the excavating of sand, gravel, sandy soil, or other unstable material, the trench shall adequately sheeted, braced, and drained. The trench shall be so maintained in accordance with OSHA regulations so that workers may work thereon safely and efficiently. It is essential that the trench pumps discharge into natural drainage channels or drain toward storm drains. Trench sheeting shall remain in place until the pipe has been laid, tested for defects and repaired, if necessary, and the earth around it compacted to a depth at least level with the top of the pipe.

Any excavated materials approved by the Project Manager to be stockpiled, shall be piled in a manner that will not endanger personnel and pedestrians, and will not obstruct driveways, sidewalks, or thoroughfares. Drainage lines shall not be obstructed.

#### 5.5.7 Contaminated Soil

In the event the Contractor suspects encountering contaminated soil (i.e., soils containing asbestos, PCBs, petroleum products, hazardous waste, radioactive material, and/or any other substance that presents a potential danger to persons or property exposed thereto), the Contractor shall take the following steps:

- immediately stop all work in the vicinity of the contaminated soil, and notify the Company inspector or the Company Radio Room at 569-3600;
- immediately notify "Emergency Response" at 911;
- immediately secure the work site to prevent access by unauthorized personnel;
- notify the Kentucky Department for Environmental Protection at (502) 564-2380 or 1-800-928-2380;
- follow the instructions from the Kentucky Department for Environmental Protection for disposal of the contaminated soil; and
- resume work in the vicinity.

If it is the Contractor's opinion that additional compensation to the Contract amount and/or extension of time to Contract is due as a result of encountering contaminated soil, the Contractor shall submit a written claim in accordance with the guidelines stated in the **ARTICLES OF AGREEMENT**.

#### 5.5.8 Preservation of Landscape

In lawn, parks, and private property, the existing sod may, at the Contractor's option, be stripped and rolled to be saved and relaid, or replaced with new sod of equal quality as existing. (See "RESTORATION" (Section 11) ).

If trenching machines are used, care shall be taken to avoid damage to trees or existing structures above or below ground. Trees and shrubs shown on the plans and labeled "PROTECT, DO NOT DAMAGE" are to be protected from any damage both above and below ground, and the property owner is to receive full remuneration for any damage. Trees at other locations shall not be damaged or removed without explicit instructions from the Project Manager and owner or agency responsible therefore. The plans may call for certain shrubs and trees in private right-of-way to be transplanted until operations are completed and replaced in their original location or replaced with new stock.

#### 5.5.9 Preservation of Historical Construction Materials

When historical construction materials (such as large brick, granite blocks, or other large stone building blocks used in the course of pavement) are encountered in City of Louisville streets, they shall be removed cautiously by the Contractor and salvaged by the City. The Contractor shall notify the City Garage at 574-3181 for pick up, between 7 a.m. and 3:30 p.m., Monday thru Friday.

## 6. INSTALLATION

### 6.1 Handling Pipe and Appurtenances

Proper equipment, tools, and facilities satisfactory to the Project Manager shall be provided and used by the Contractor for the safe and convenient prosecution of the work. Slings used in handling the pipe shall be made of non-abrasive materials such as nylon. Chains, single cables, or any sharp abrasive material that may damage the pipe shall not be used. Pipe fittings, valves, and other accessories shall at all times be handled with care to avoid damage. In loading and unloading, they shall be lifted by

hoist or by derrick, or rolled on skidways, in such manner as to avoid shock. Under no circumstances shall they be dropped.

When handling polyvinyl chloride pipe, the Contractor shall avoid abrasion damage and gouging or cutting by metal surfaces or rocks, and any stressing of bell joints and damage of bevel ends. Avoid severe impact, particularly in subfreezing temperatures. In subfreezing temperatures, caution is advised in handling to prevent impact damage. NOTE: When handling PVC pipe in cold weather, consideration must be given to variation in the pipe's impact strength. The impact strength of PVC pipe at 0°F (-16°C) is no worse, and is in some cases even better, than the impact strength of many other pipe products; however, unlike some other materials, PVC pipe's impact strength at 0°F (-16°C) is lower than its impact strength at 73°F (23°C). Also, low temperatures cause dimensional changes that may allow movement of pipe within unit packages. As a result, handling techniques considered acceptable at warm temperatures may be unacceptable at very cold temperatures.

In distributing the material at the site of the work, each piece shall be unloaded opposite or near the site where it is to be laid in the trench.

All pipe, fittings, and valves shall be carefully lowered into the trench, piece by piece, by means of derrick or other suitable equipment, in such a manner as to prevent damage.

The interior of all pipe, fittings, and other accessories shall be kept free from dirt and foreign material at all times.

## 6.2 Laying Pipe and Appurtenances

All pipe laying shall be done under the supervision of an experienced superintendent who will be constantly on the job to supervise the laying of all pipe and making of all joints.

All polyvinyl chloride pipe laying shall be in accordance with AWWA Manual No. M23 "PVC Pipe - Design and Installation", unless otherwise specified herein.

All ductile iron pipe laying shall be in accordance with the current edition of AWWA Standard Specification C600, "AWWA Standard for Installation of Ductile Iron Water Main and Their Appurtenances", unless otherwise specified herein.

Unless shown otherwise on the contract drawings, polyvinyl chloride pipe joints will be elastomeric gasketed bell end type, and ductile iron pipe joints will be rubber ring gasketed type. The Contractor shall furnish all

materials necessary to make all joints completely assembled, except as described in "Furnished to the Contractor" (Section 4.2).

The method of handling, hauling, and placing pipe in the trench shall be such as in no way will injure or damage the ductile iron pipe and coating or the polyvinyl chloride pipe. All damage to pipe and/or appurtenances shall be paid for by the Contractor.

All pipe shall be clean and kept clean. The exposed ends of pipe in the trench shall be closed by suitable plug at all times when pipe laying is not actually in progress.

All pipe shall require a six-inch undercut and a six-inch compacted depth layer of backfill to insure proper bedding for the pipe. These requirements are described in the sections "Trenching" and "BACKFILLING PROCEDURES AND TAMPING" (Sections 5.5 and 7, respectively).

Wherever either horizontal or vertical curves or angles are shown on the drawings, or found to be needed, appropriate ductile or gray cast iron bends shall be used with polyvinyl chloride pipe or ductile iron pipe. Under no circumstances will the bending of polyvinyl pipe be allowed. When laying ductile iron pipe, joint openings not exceeding four degrees will be allowed. Backfilling procedures and mechanical tamping of backfill material shall be strictly adhered to as specified in the "BACKFILLING PROCEDURES AND TAMPING" (Section 7) of these specifications.

### 6.3 Boring and Tunneling

When boring is required where there is a paved road to be crossed, and at any other location required, the Contractor shall use a boring tool of the proper size to form a tunnel for the purpose of threading the pipe from one excavation to the other without cutting the road surface. Casing pipe shall be provided to the Contractor by the Louisville Water Company. Where such methods are used, a plug or suitable closure shall be inserted in the end of the pipe to exclude any earth from the inside of said pipe. Where it is necessary to cut the paved surfaces to accomplish the above boring beyond the limits of the excavation necessary to make the tap, the cost of making such pavement repairs shall be borne by the Contractor.

Whenever water main is to be installed through casing pipe, the water main shall be ductile iron pipe with restrained joints. Steel casing pipe and ductile iron restrained in the pipe, both to be installed by the Contractor, will be furnished by the Louisville Water Company at its Allmond Avenue warehouse.

When ductile iron restrained-joint pipe is installed in casing pipe, as provided by Louisville Water Company, spacers shall be used to prevent damage during installation and to provide long term support. Pipe shall not rest on bells. Casing spacers shall provide sufficient height between bell joint and casing wall and should be fastened securely to the pipe. Unless otherwise stated in the **BIDDER'S PROPOSAL** form and/or the **SUPPLEMENTARY SPECIFICATIONS**, there shall be three (3) spacers for each typical 18-foot pipe length, to be placed at the 3-foot, 9-foot, and 15-foot locations.

Pipe may be installed in the casing using winch-drawn cable or jacking. Exercise care to avoid damage to the pipe, bell joints, and polywrap.

For ease of installation, use a lubricant such as flax soap or drilling mud between casing spaces and casing. Do not use petroleum products such as oil or grease.

Any rock encountered in the construction of bore pits and/or receiving pits shall be unclassified.

The Contractor shall submit drawing(s) and a full description of the planned procedure for tunneling or boring for approval by the Project Manager. If voids shall develop or if the excavation is greater than the outside diameter of the liner by more than approximately one (1) inch, they shall be filled by pressure grouting at a minimum pressure of 10 psi to a maximum pressure of 15 psi with a 1:3 grout mix to provide the proper support.

#### 6.4 Mechanical and Push-on Joint Assembly

##### 6.4.1 General

All rubber-gasket joints shall be made in accordance with the current edition of AWWA Standard Specifications C111 "Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings", as recommended by the manufacturer, and as described below.

All elastomeric-gasket joints shall be made in accordance with the current edition of AWWA Standard Specification C900 "Polyvinyl Chloride (PVC) Pressure Pipe, 4-inch Through 12-inch, for Water Distribution", as recommended by the manufacturer, and as described below.

##### 6.4.2 Mechanical Joint

The last eight inches (8") of the inside of the bell and the outside spigot end shall be thoroughly cleaned to remove oil, grit, excess

coating, and other foreign matter from the joint, and then painted with a manufacturers approved lubricant. The cast iron gland shall then be slipped on the spigot end of the pipe with the lip extension of the gland toward the joint. The rubber gasket shall be painted with the lubricant and placed on the spigot end with the thick edge toward the gland. The entire section of pipe shall be pushed forward to seat the spigot end in the bell.

The gasket shall then be pressed into place within the bell with care being taken so that the gasket shall evenly located around the entire joint. The cast iron gland shall then be moved along the pipe into position for bolting, all of the bolts inserted, and the nuts screwed up tightly, with the fingers. Nuts spaced 180 degrees apart shall be tightened alternately, in order to produce an equal pressure on all parts of the gland. The torque applied for various sizes of bolts shall be as follows:

5/8"	40 - 60 ft.-lbs.
3/4"	60 - 90 ft.-lbs.
1"	70 - 100 ft.-lbs.
1-1/4"	90 - 120 ft.-lbs.

Polyvinyl chloride pipe shall be assembled by hand or with the use of bar and block. Construction machinery shall be used with polyvinyl chloride pipe only if recommended by the pipe manufacturer.

#### 6.4.3 Push-on Joint

The inside of the bell and the outside of the spigot end shall be thoroughly cleaned to remove oil, grit, excess coating, and other foreign matter. If placement of the gasket occurs in the field, the circular rubber gasket shall be flexed inward and inserted in the gasket recess of the bell socket. A thin film of gasket lubricant shall be applied to the spigot end of the pipe. Use only lubricant supplied by the pipe manufacturer. Failure to do so may promote bacterial growth or damage to the gaskets or the pipe. Correct alignment of the pipe is essential for ease of assembly. The spigot end of the pipe shall be entered into the socket with care to keep the joint from contracting the ground.

Push the polyvinyl chloride pipe into the bell or coupling, applying firm steady pressure by hand or by block assembly until the spigot easily slips through the gasket. Construction machinery shall be used with polyvinyl chloride only if recommended by the pipe manufacturer. The spigot end of the pipe is marked by the manufacturer to indicate the correct depth of insertion.

Ductile iron pipe joint shall be completed by forcing the spigot and to the bottom of the socket using a forked tool, backhoe, jack-type tool, or other device approved by the Project Manager. Pipe which has no depth mark shall be so marked before assembly to assure that the spigot end is inserted to the full depth of the joint.

#### 6.4.4 Field-Cut Pipe

Field-cut ductile iron or polyvinyl chloride pipe requires a square cut for proper assembly of mechanical joint or push-on joint. It is recommended that the pipe be marked around its entire circumference prior to cutting to insure a square cut. The end shall be beveled by using a beveling tool, rasp or grinder as appropriate to resemble the spigot end of such pipe as manufactured. Roundoff any sharp edges on the leading edge of the bevel. Reinstall depth mark using original mark by manufacturer as a guide.

When field-cut polyvinyl chloride pipe is to be inserted into a mechanical joint end, the bevel shall not be reinstalled. The above-stated requirements for a square cut, rounding off sharp edges, and establishing a correct-depth marker shall be performed.

#### 6.5 Connection to Existing Mains

The Contractor shall install the necessary pipe and fittings for the connections to the existing mains, as shown on the drawings, and shall make the connections complete, ready-for-use. It is imperative that the sequence of work involving an interruption of service be such that all operations be completed and the new pipeline ready to be connected prior to shutting off existing mains that are serving customer connections. Except for filling of the main, tie-ins shall not be accomplished until the main has passed testing and disinfection. When connections to the existing mains with water pressure on the main are to be made with a tapping sleeve and gate valve, the Contractor shall excavate the main, and install the tapping sleeve and gate valve on the main. The Contractor shall make that tap only after a hydrostatic pressure test of 125 psi is applied for fifteen (15) minutes with no leakage to the tapping sleeve and gate valve assembly. Before cutting an existing main within twenty feet away from of an existing valve under pressure, the Contractor shall excavate the existing valve and insure that it is properly secured.

Subsequently, water mains abandoned in-place shall be capped at all open ends.

Any required cutting or tapping of asbestos-cement pipe shall be performed by Louisville Water Company personnel, and shall be in

compliance with all OSHA requirements. This work shall be coordinated by the Contractor through the Project Manager.

#### 6.6 Setting Cast Iron Valves and Fittings

Valves, air valves, blow offs, and drains shall be assembled, and joints made up, both flanged and mechanical joint, as indicated on the contract drawings. Valves 12" and larger on ductile iron pipe and all valves on polyvinyl chloride pipe must be anchored by #4 coated and deformed reinforcing bar, wrapped around each end of the valve, and cast in a cast-in-place concrete anchor block under each valve. This is critical for polyvinyl chloride pipe and will be strictly enforced. The weight of each valve shall be supported by solid pre-cast concrete blocks. Cast-in-place concrete shall then be poured up to the bottom of the valve. In no instance shall the weight of the valve be supported by the adjacent pipe. If PVC pipe is used with iron fittings, the weight of each fitting shall be supported by a 2' x 2' x 1' cast-in-place concrete support block; rod anchorage is not required. The concrete support block shall bear against undisturbed earth, as shall the other above-mentioned types of concrete blocking. The Project Manager shall have the authority to direct the Contractor to add line valves if they are needed to facilitate the project and/or to keep service outages to an absolute minimum.

#### 6.7 Polyethylene Wrap

Polyethylene wrap shall be installed in accordance with the current edition of American Water Works Association Standard Specification C105 (ANSI A21.5) for American National Standard for Polyethylene Encasement, unless otherwise specified herein.

Polyethylene wrap will be furnished by the Company in 500 foot rolls. The Contractor shall cut the roll in tubes 2 feet longer than standard length of pipe. Each tube shall be slipped over the length of pipe, with centering to allow a one foot overlap on each adjacent pipe section. After the lap is made, slack in the tubing shall be taken up for a snug fit, and the overlay shall be secured with polyethylene tape. Each length of pipe shall receive two separate polyethylene wraps as described above. Pipe shall not be wrapped and stored on site for any period of time, but wrapped and immediately placed in the trench. Pipe to be wrapped shall include ductile iron and ductile iron restrained-joint pipe and iron fittings. Polyvinyl chloride pipe requires no wrap.

Odd shaped appurtenances such as valves, tees, fittings, and other ferrous metal pipeline appurtenances shall be wrapped by using a flat sheet of polyethylene. Wrapping shall be done by placing the sheet under the

appliances and bringing it up around the item to be wrapped. Seams will be made by bringing the edges together, folding twice, and taping down. Each appurtenance shall receive two separate polyethylene wraps as described above.

Care will be taken when backfilling to prevent damage to the polyethylene wrapping. Sections of wrapping having cuts, tears, punctures, or other damage shall be repaired or replaced.

AWWA Standards for installing polyethylene wrap and manufacturers' recommended methods for installing polyethylene wrap are available for review at the office of the Louisville Water Company.

#### 6.8 Installation of Tracing Wire and Identification Ribbon

Because of the insulating property of polyvinyl chloride pipe, it cannot be located by electronic sensing devices; therefore, the Contractor shall install insulated #12 solid copper wire along with the polyvinyl chloride pipe. This wire shall be laid directly over the water main. At each and every valve: the wire shall be directly connected to one of the valve bonnet bolts, and shall extend upward along the outside of the keytube but inside the round top frame. The wire shall also be connected to a fitting at each of the water main. The tracing wire shall be wrapped once around each copper or cast iron service line.

Although with this wire, the Contractor shall also install a thin metallic identification ribbon. Under paved surfaces, this ribbon shall be laid directly beneath the concrete base and directly over the water main. Under the unpaved surfaces, the ribbon shall be installed no more than one (1) foot beneath the finished grade and directly over the main. Two-inch (2") or three-inch (3") wide ribbon shall be used over PVC mains eight-inch (8") and smaller, and six-inch (6") wide ribbon shall be used over twelve-inch (12") mains. Both wire and ribbon shall be supplied by the Louisville Water Company. Probing rods shall not be used to locate polyvinyl chloride pipe.

#### 6.9 Cast Iron Frames and Lids

The Contractor shall set all cast iron frames, round top shims, and lids for valves, air valves, and vaults. These frames and lids shall be set to grade and maintained in the proper position for the duration of the period covered by this contract, including the thirty-day acceptance period. Round top shims shall be used under round tops set in bituminous pavement.

Cast iron frames and lids shall be removed on all discontinued vaults, and

surfaces shall be restored in accordance with the appropriate requirements of the sections "BACKFILLING PROCEDURES AND TAMPING" and "RESTORATION" (Sections 7 and 11, respectively). All out-of-ground cast iron frames and lids shall be returned to the Allmond Avenue warehouse.

#### 6.10 Valve Boxes

Standard valve boxes consisting of keytubes, extension pipes, and round tops and lids shall be furnished by the Company and installed on all valves by the Contractor. These boxes shall be centered about the operating nuts, shall be vertical, shall be set to grade, shall be placed and maintained in the proper position, and shall be free of dirt or other matter for the duration of the period covered by this contract including the thirty-day acceptance period. Styrofoam collars shall be placed around each valve box before placement of concrete and in such a manner to allow the valve box to be raised to grade without demolishing the concrete subbase.

In areas of bituminous pavement, round top shims shall be furnished by the Company and installed by the Contractor under the round tops. The shims shall be installed after the subbase has cured, and before placement of the bituminous pavement.

Round tops and lids on all valves that are to be abandoned shall be removed and returned to the Allmond Avenue warehouse. The keytube shall be filled and surfaces restored in accordance with the appropriate requirements of the sections "BACKFILLING PROCEDURES AND TAMPING" and "RESTORATION" (Sections 7 and 11, respectively).

#### 6.11 Plugging Ends of Pipe

When work is stopped at the end of a day, a cast iron plug shall be bolted in place in the open end of the pipe to prevent any foreign matter or trench water from entering the line. Permanent plugs or caps shall be inserted where shown on the contract drawings, and shall be securely braced as shown on the thrust anchor details included on the detail sheet of the contract drawings. If it is desired to fill a section of the main before the entire line is completed, at least two lengths of pipe shall be installed and backfilled beyond a gate valve forming the closure at the end of the line, and said gate valve shall be securely braced.

#### 6.12 Thrust Anchors, Counterweights, and Restrained-Joint Hardware

The Contractor shall install concrete thrust anchors or counterweights (3,500 psi concrete) at each bend in the pipeline of five (5) degrees or greater and at all other fittings, including reducers, to withstand maximum

test pressure. The Contractor shall provide all labor and material to construct the thrust anchors, piers, and counterweights, for all fittings, both horizontal and vertical. These concrete thrust anchors shall be minimum dimensions and size as indicated on the thrust anchor schedule shown on the detail sheet in the project drawings.

Company-supplied restrained-joint hardware is not intended to be used in lieu of concrete thrust anchors and counterweights. Such hardware is to be used ONLY when it is necessary to return a water main to service immediately, as when making tie-ins or at the specific instructions of the Company. Whenever restrained-joint hardware is used to restrain fittings, the Contractor must also pour a concrete thrust block. In no instances, except for fire hydrant installations, shall restrained-joint hardware alone be accepted as a permanent thrust restraint.

## 7. **BACKFILLING PROCEDURES AND TAMPING**

### 7.1 General

In general, trench dimensioning and backfill materials shall be as follows: six inches of vertical clearance with the bottom of the trench, and the subsequent layered placement of pit run sand or DGA bedding along the bottom of the pipe; nine inches of horizontal clearance with each side of the trench, and the subsequent layered placement of pit run sand or DGA backfill along each side of the pipe; the layered placement of pit run sand or DGA backfill to the elevation of twelve inches above the crown of the pipe; and, if in a lawn area, the remainder of the backfill to be common (but acceptable) fill, or, if in a paved and/or a to-be-paved area, the remainder of the backfill to be the layered placement of pit run sand or DGA up to the bottom elevation of the respective pavement restoration scheme. The total depth of cover (i.e., the vertical distance from crown-of-pipe to ground/pavement surface) shall be at least forty-two (42) inches.

The cost of applicable backfill material, backfilling, and required tamping shall be covered in the base bid as shown on the **BIDDER'S PROPOSAL** form.

All backfill shall be properly compacted by pneumatic, vibratory, or other approved compaction equipment. Degree of compaction shall be at least 90 percent of Modified Proctor (ASTM D-1557), and the compaction effort shall be performed in a uniform and consistent manner. If it elects to do so, the Company shall arrange for and pay for nuclear density gauge tests in order to determine if the specified degree of compaction has been achieved.

When instructed by the Project Manager, the Contractor shall excavate

backfilled material to a particular grade for testing. Backfilled areas which do not pass this test shall be excavated and recompact until they meet compaction specifications. Areas excavated for testing shall be recompact in accordance with this compaction specification. The cost of this work shall be included in the base bid.

Appropriate and sufficient backfill material shall be furnished by the Contractor to replace material deemed unsatisfactory by the Project Manager or the field representative. Unsatisfactory material includes unsuitable soil as described in "Final Backfilling" (Section 7.4) and frozen or exceptionally wet backfill material, and may include backfill material excavated for testing purposes or backfill material excavated for failure to meet compaction requirements.

## 7.2 Bedding

For the entire length of the trench, the excavation shall provide a six-inch space below the pipe, which shall be placed by hand and firmly compacted with pit run sand or Dense Graded Aggregate, as specified by the Kentucky Transportation Cabinet Department of Highways Standard Specification for Road and Bridge Construction, (latest edition) "Coarse Aggregate," to form a bedding for the pipe. The bedding shall be excavated at bells, valves, and fittings so the barrel of the pipe will have a bearing for its full length.

## 7.3 Initial Backfilling

Initial backfill should occur as soon as possible after the laying of pipe, so as to prevent the pipe from shifting. After the pipe has been placed on the bedding, pit run sand or Dense Graded Aggregate shall be deposited in the trench by mechanical equipment and distributed in six-inch layers by hand on both sides of the pipe for the full width of the trench, the trench width having nine inches of horizontal clearance along each side of the pipe. The pit run sand or Dense Graded Aggregate shall be tamped in six-inch layers and thoroughly compacted under the centerline and on each side of the pipe. Backfill shall be placed and tamped to a height of at least twelve inches (12") above the top of the pipe. Initial backfill should occur as soon as possible after the laying of pipe to protect against shifting.

## 7.4 Final Backfilling

When not under paved surfaces or surfaces where paving intended, the remainder of the trench shall be backfilled with soil free from brush or vegetable matter, rocks larger than fist-size, pieces of concrete larger than fist-size, cinders, or any other matter which could prevent proper consolidation.

When under paved surfaces or surfaces where paving is intended, the remainder of the trench shall be backfilled for the full depth with pit run sand or Dense Graded Aggregate, as specified by the Kentucky Department of Highways Standard Specification for Road and Bridge Construction, (latest edition) "Coarse Aggregate." At pavement crossings, this pavement backfill shall extend five feet (5') beyond each end of the paving or proposed paving.

Whether under paved or unpaved surfaces, the final backfill shall be tamped by pneumatic or other approved tamping equipment in successive layers of six inches or less in height to finish grade or pavement restoration as required. If Hydrahammer is approved by the Project Manager, compaction shall be performed in successive layers two feet (2') or less in height to finish grade or pavement restoration. Water jetting will not be allowed except by written approval by the Project Manager.

The total depth of cover (i.e., the vertical distance from crown-of-pipe to ground/pavement surface) shall be at least forty-two (42) inches.

#### 7.5 Manufactured Sand and the By-product of Trench Rock Excavator

Manufactured sand and/or the by-product of trench rock excavator equipment are not to be considered as acceptable pipe bedding and/or backfill material by the planholder during the compilation of his/her bid. Written approval might be granted by the Project Manager to the successful bidder as Contractor to use these two products if, and only if, the successful bidder as Contractor agrees to: wash the product(s) thoroughly (i.e., no dust particles); and to sieve the product(s) thoroughly so that no individual rock pieces exceed one inch in its longest dimension.

#### 7.6 Shrinkless Fill

In special situations, the Contractor may use a quick-setting, cementitious flowable shrinkless fill, but only with the prior written approval of the Project Manager. The 28-day compression strength of said fill shall not exceed 100 psi, and the minimum strength shall be 70 psi.

### 8. PLACING PIPE IN SERVICE

#### 8.1 Filling and Cleaning the Pipe

After a section of main has been properly installed and valved, preparation shall begin to fill, disinfect, and pig clean the main. The cleaning pig shall be inserted into the pipeline at the time of installation. Pigs shall be supplied by Louisville Water Company.

The main shall be installed applying HTH pellets to each section of pipeline during construction, and shall be chlorinated prior to beginning the pigging operation. The main shall be filled from downstream of the pig. The main shall sit with hyperchlorinated water in it for at least a 24-hour period prior to the beginning of flushing operations.

When beginning the pigging operation, the valve upstream of the pig shall be opened allowing the pig to move at approximately one (1) fps. Hyperchlorinated water shall be discharged through the end of the pipeline from which the pig shall be removed in accordance with the requirements of Section 8.2.2, Discharge of Hyperchlorinated Water.

When the pipe is filled, air shall be expelled through fire hydrants or flushing connections. All flushing connections, fill connections, and discharge connections shall be installed by the Contractor at locations indicated on the construction drawings or as directed by the Project Manager, if a fire hydrant or service connection cannot be utilized. If not specified to be furnished by the Company, particular components of flushing/discharge hardware shall be furnished by the Contractor.

With respect to flushing, the Company's standard operating procedure is as follows. The flushing assembly is to be checked-out from the Company's meter shop by the Contractor or by the Company's Inspector, and shall be returned by same after flushing operations have been completed. The meter/check valve portion of the flushing assembly is not to be installed until after the completion of pigging operations (so as to protect the meter/check valve from internal damage caused by debris); extra 2-inch nipples and couplings may be needed in place of the meter/check valve. Upon the completion of pigging operations and prior to the start of flushing operations, the meter/check valve is to be installed, with an initial meter reading taken, and the main shall sit with hyperchlorinated water in it for at least a 24-hour period. The Contractor is to supply a 2-inch hose to be used during flushing operations. Upon the completion of flushing operations, a final meter reading is to be taken.

## 8.2 Disinfection

### 8.2.1 Methods

After a section between lines valves has been completed, the main shall be disinfected in accordance with the requirements of the Kentucky Division of Water, Natural Resources and Environmental Cabinet. The method to be used to achieve these requirements will be application of HTH pellets (furnished by the Company) to each pipe length at the time of installation.

The Contractor shall equally apply HTH (furnished by the Company) throughout the entire section of pipeline during the installation to produce a concentration of at least fifty (50) ppm and a residual of at least twenty-five (25) ppm at the end of 24 hours, to be followed by thorough flushing; this is in compliance with 401 KAR 8:150 "Disinfection and Filtration", Sections 4(1) and 4(2). The following amounts of HTH, per 100 linear feet of pipeline, should produce fifty (50) ppm of chlorine:

Amount of HTH per 100 Linear Feet of Pipeline

<u>Pipe Size</u>	<u>Weight of HTH</u>	<u>Volume of HTH</u>
4"	0.75 ounce	1/8 cup
6"	1.50 ounces	1/4 cup
8"	2.75 ounces	3/8 cup
12"	6.00 ounces	7/8 cup
16"	10.75 ounces	1-1/2 cups
20"	16.75 ounces	2-1/2 cups

After the disinfection procedure has begun, the Contractor shall not operate any valves, including those he/she has installed, without consent of the Project Manager or his/her representative.

The Contractor shall perform the chlorination under the complete control of the Project Manager.

8.2.2 Discharge of Hyperchlorinated Water

Discharge of hyperchlorinated water can be made to combined or sanitary sewer facilities only after the Project Manager has received approval from the Industrial Waste Manager or Industrial Operations Manager of the Louisville and Jefferson County Metropolitan Sewer District. The Contractor shall provide 72 hours notice to the Project Manager of intended discharge of hyperchlorinated water.

If the discharge of hyperchlorinated water can not be to a combined or sanitary sewer, the hyperchlorinated water shall be neutralized to a chlorine concentration of less than 0.1 ppm before discharge to a storm drain or onto the ground surface. The Contractor shall arrange for, pay for, furnish, and return to the supplier the necessary number of sulfur dioxide containers needed to dechlorinate all of the hyperchlorinated water. The Contractor

shall be responsible for the lawful transportation, handling, and/or storage of the sulfur dioxide containers. The Company shall furnish all of the hardware necessary for the dechlorination operation. The Project Manager shall reserve the right to postpone the dechlorination operation in the event of an anticipated major rain event.

### 8.3 Combined Hydrostatic and Leakage Test

Prior to performing the combined test, the water main installation, or any section thereof, shall be completed, discharged of hyperchlorinated water, filled with water, expelled of air, flushed to ambient available chlorine concentration, and properly valved off. Water main shall then be subject to a hydrostatic pressure of 200 p.s.i. at the lowest point along the section being tested for a period of two (2) hours. In conjunction with they hydrostatic test, a leakage test shall be conducted at the same pressure and for the same period of time. The leakage allowed will be as given by the following table. All of this testing shall be accomplished in the presence of the Project Manager or his/her representative.

#### Allowable Leakage per 1000 feet of Pipeline (gallons/hour)

<u>Average Test Pressure (psi)</u>	<u>Pipe Diameter (In)</u>					
	<u>4</u>	<u>6</u>	<u>8</u>	<u>12</u>	<u>16</u>	<u>20</u>
225	0.50	0.68	0.90	1.35	1.80	2.19
200	0.46	0.64	0.85	1.28	1.70	2.07
175	0.42	0.59	0.80	1.19	1.59	1.95

Before the hydrostatic test is begun, the Contractor shall backfill all pipe, provide all temporary and permanent reaction anchor blocking, and provide taps for releasing air at all points of highest elevation where no fire hydrant or flushing connection has been installed. It shall be the Contractor's responsibility to locate and repair any and all leaks that may develop. All pipe, fittings, and other materials found to be defective under test shall be removed and replaced. These tests shall be repeated until satisfactory to the Project Manager. On mains of less than 500 feet in length, the Project Manager may waive the requirement for testing by written notice to the Contractor and the Company after completion of the water main.

The required testing apparatus, consisting of a gasoline motor driven pump, valves, pressure gauge, meter, 60 feet of hose, and connections, shall be picked up and returned to the Company yard, the day the test is to be run. The Contractor shall be responsible for all phases of testing the water main, and shall include the costs involved in the base bid.

## 9. FIRE HYDRANT

### 9.1 Materials and Installation

The fire hydrant installation shall consist of the following items, and shall be as shown on the detail sheet of plans.

The location of fire hydrants shall be approved by the Company's inspector prior to installation.

The cast iron fire hydrant anchor tee and gate valve shall be installed as the main is laid. A tapping sleeve and gate valve shall be installed if the main is already active. In all cases, the hydrant gate valve must be secured to the main.

The type of connecting pipe (i.e., hydrant lead) shall be ductile iron pipe, in all cases, regardless of the type of main in the street.

The hydrant shall be that furnished by the Company, designed for proper depth of bury, shall have a drain hole, and shall be so installed that the barrel will properly drain.

Two layers of polyethylene wrapping shall be installed from the fire hydrant anchor tee to the base elbow of the fire hydrant, including the hydrant valve, connecting pipe, and thrust restraints. The wrapping shall not impede the drain holes located near the bottom of the hydrant barrel.

The hydrant shall be set plumb, and shall have the pumper nozzle at right angles to the curb, except that hydrants having two pumper nozzles 124 degrees apart shall be set with each nozzle facing the curb at an angle of 62 degrees. The bottom of the break-away flange bolts shall be located from 1"-7" above finished grade. The hydrant shall be set to established grade, with the center of the barrel 18" back of the face of the curb line or as directed, or in the absence of a curb approximately eight feet from the edge of the pavement, and the center of the nozzle 18"-24" above finished grade. The base of the hydrant shall be set on a precast concrete block. The back of the elbow shall be well anchored against undisturbed earth by means of a precast concrete block. Through-bolts or restrained joint hardware, supplied by the Company, are to be installed between the gate valve and the hydrant.

When a bore is required under a paved road, the Contractor shall abide by Section 6.3 "Boring and Tunneling".

The terms "relocate", "renew", and "transfer" shall apply to fire hydrant removal/installation in a parallel manner as said terms apply to service vault removal/installation; see Section 10 "SERVICE WORK" for definition details.

## 9.2 Drainage Pit

Whenever a hydrant is set, a drainage pit three feet square and two feet deep shall be excavated below each hydrant elbow and filled compactly with crushed stone under and around the elbow of the hydrant and to a level of two feet (2') above the base of the elbow. Dimensions of the pit shall be 3 ft. long x 3 ft. wide x 4 ft. deep, with the pit centered about the barrel of the hydrant and the top of the pit two feet above the base of the hydrant elbow.

No less than one cubic yard of #3 crushed stone shall be used around the bottom of the hydrant, and in no case shall there be a connection to a sewer. The top of the drainage pit shall be covered with a plastic sheet before backfilling. Before this dry well is covered with backfill, the Contractor shall notify the Project Manager in order that each drainage system may be inspected.

## 10. SERVICE WORK

### 10.1 Notification of Customers

It is the intent of the Company not to interrupt service to existing customers, unless absolutely necessary. When it is necessary to interrupt service, all customers affected by shut-off shall be notified in person, or in cases where the customer cannot be contacted, by a note attached to the front door of their premises.

Such information shall be made twenty-four hours prior to shut-off and with Company approval, allowing sufficient time for the customer to draw and reserve an ample supply of water. Forms for notification are available from the Company.

### 10.2 Service Installation

A service installation is defined to include all work necessary to install the copper tubing or pipe and all related items from the main to the property line. Under some circumstances, tubing/piping work may extend up to five (5) feet beyond the property line. The installation shall include, but is not limited to, the following: jacking of copper tubing, or excavating or

boring for polyvinyl chloride (PVC) or ductile iron pipe; corporation stop (corporation cock) and tapping saddle, or tapping sleeve and gate valve at the main; meter vault; cast iron frame and lid; water meter and associated valves and fittings; all tubing and/or pipe; and backfilling and restoring of all surfaces. Excavation, backfilling, and restoring paved and unpaved surfaces shall be done in accordance with "Service Excavation At Main" (Section 10.14).

Long services are defined as services to meters on the opposite side of the street from the water main to which it is connected. Short services are defined as services to meters on the same side of the street as the water main to which it is connected.

When installing a service on pipe wrapped with polywrap, before making the tap, wrap three layers of polyethylene-compatible tape completely around the pipe to cover the area where the tapping machine and chain will be mounted. Make the tap and install the corporation stop directly through the tape and polywrap. After making the service connection, wrap the corporation stop and a minimum distance of three feet (3') of the copper service with polywrap. Inspect the entire circumferential area of the main and make any necessary repairs.

For polyvinyl chloride (PVC) pipe, service outlets of 3/4" through 2" shall be made with a tapping saddle. For ductile iron pipe, service outlets of 3/4" - 2" shall be made by direct tapping. Service outlets of larger than 2" shall be made with a tapping sleeve and gate valve on existing ductile iron or polyvinyl chloride pipe. Service outlets of larger than 2" shall be made with a ductile or gray cast iron tee on new ductile iron or polyvinyl pipe. When using service saddles, saddle bolts shall be tightened with a torque wrench according to the saddle manufacturers' torque recommendations.

When installing a service on PVC, the Contractor shall use a shell cutter that is designed for walls as heavy as DR14 (pressure class 200, AWWA C900) and one that will remove the material and retain the coupon. No twist drills will be allowed. The cutting toll must be sharp and without damage.

When tapping the PVC pipe under pressure, the ambient temperature shall be between 32° and 90° F. The taps shall be located a minimum of 18" from the joint of the PVC pipe, and, if installing more than one tap in one length of PVC pipe, the taps shall be staggered and a minimum of 18" apart, measured longitudinally. Taps shall not be made in an area of PVC pipe that shows discoloration.

Service connections shall be installed so that the outlet is at an angle of 45° above the horizontal. A bend in the service line shall be provided to

insure flexibility and to accommodate the effects of loads.

In direct tapping of iron pipe, the tap threads must match the corporation stop's AWWA threads. The pipe and corporation stop shall be examined to insure acceptability for direct tapping.

Tapping sleeves shall be assembled according to the manufacturers' instructions and must be supported independently of PVC pipe by precast concrete blocks during the tapping operation. The support shall be left in place, filling any voids such that the pad is bearing against undisturbed earth, and thrust blocks shall be used as with other fittings.

### 10.3 Tapping Mains

All taps in water mains shall be made by the Contractor, and corporation stops shall be inserted by means of a tapping machine in such manner that will permit continued conditions of water flow and pressure within these mains. The Contractor shall use care in inserting and tightening the corporation stop, and shall reimburse the Company for any damage or expense caused by any of his/her activities under this contract. With permission of the Company, tapping saddles may be used on ductile, cast iron, and asbestos-cement water mains. Tapping saddles will be used on plastic water mains. When a service tap is made on a plastic water main, No. 12 copper tracer wire will be connected to the No. 12 copper tracer wire on the main and then wrapped around the copper service line. After the tap is completed on mains with polyethylene wrap, the Contractor shall repair and replace the polyethylene wrap to completely cover the main and corporation stop in accordance with the detail in the Appendix of Drawings. The service line shall be flushed before connecting to the meter.

### 10.4 Laying and Handling Copper Tubing

Special care shall be observed in handling the copper tubing so as not to kink, mash, or damage it. No damaged tubing shall be installed. All damaged tubing or scraps shall be returned to the proper Company storekeeper for credit. The use of a copper tubing bender will be required. No bend shall be made in the tubing with a radius less than four inches (4"). Where under pavement, tubing shall be laid continuously and in one piece without intermediate joints or couplings, except at the terminals and except where the continuous length to be laid exceeds one hundred feet (100') for 3/4" and 1" sizes.

### 10.5 Joints

All intermediate and terminal joints for 3/4" and 1" sizes of copper tubing

shall be the flared typed, using the proper flaring tools for the sizes of tubing and types of fittings involved.

#### 10.6 Setting Meter Vaults

Meter vaults shall be set either to the existing grade, or of indicated "Special Handling" on the service order to the grade given by a stake card. Earth shall be firmly tamped around the vault and cover, the lid locked in and the meter setting centered in the middle of the vault and at the proper depth below grade, as shown on the drawing in the Appendix of Drawings. Meter vaults shall not be installed in areas subject to vehicular traffic if avoidable. When directed to be installed in areas subject to vehicular traffic, the meter vault shall be of the heavy duty concrete type with heavy duty frame and cover.

#### 10.7 Pressure Regulators

When directed by the Project Manager, the Contractor shall install a pressure regulator. (See the Appendix of Drawings.)

#### 10.8 Tail Pipes

Tubing shall extend from the meter setting assembly to up to five feet beyond the property line, and the end mashed to form a watertight closure. The tail pipes of a service installation, where two meters are to be installed in one vault, shall be installed parallel for their entire length and at least eight inches (8") apart, and in no event shall they cross one another.

#### 10.9 Testing the Service

After the complete service has been installed and before any joints are covered, the corporation stop shall be opened, the entire length of the service filled with water and each joint observed by the Contractor for leaks. Any leaks so found shall be immediately repaired. After the service has been observed by the Company field representative to be watertight throughout its length, the curb stop shall be shut off and the backfilling started. The Contractor shall leave the corporation stop fully open and the meter angle stop fully closed when he/she has completed the testing of each completed service.

#### 10.10 Relocate Service

Relocating a service is defined to include installing a complete new service to an existing customer, including a new tail pipe, discontinuing the old service at the main (in the event the existing main is to remain active), abandoning the old meter vault, and returning the old meter and

cast iron frame to the Louisville Water Company's Allmond Avenue Yard. Concrete meter vaults shall be used in driveways, parking lots, and other areas of vehicular traffic. Excavation, backfilling, and restoring of surfaces shall be done in accordance with "Service Excavation At Main" (Section 10.14). Abandoning the old meter vaults shall be done in accordance with "Backfill Meter Vault" (Section 10.15). The Project Manager has estimated the number of services to be relocated, and these are shown on the drawings. The Contractor shall include the cost of these relocations in the base bid. Unit prices are included in the **BIDDER'S PROPOSAL** form for changing quantities from the estimated number of services to be relocated.

#### 10.11 Renew Service

Renewing a service is defined to include installing a new copper service line from the existing main or new main to the meter stop, and, in the event the tail pipe is lead or galvanized, a new copper tail pipe from the angle coupling to the property line or the joint where the tail pipe connects to the customer service line (whichever is shorter) and shall include, but is not limited to, the following: excavation; boring or jacking of copper tubing or pipe; installing corporation stop (corporation cock); tapping saddle or tapping sleeve and gate valve at the main; installing all tubing and/or pipe and all associated fittings; and backfilling and restoring of all surfaces. Tail pipes are normally five feet or less in length; the meter vault is usually located at or near the edge of the public right-of-way or Company easement. All existing lead and galvanized service lines found will be renewed, unless otherwise instructed on the plans. Excavation, backfilling, and restoring of surfaces shall be done in accordance with "Service Excavation At Main" (Section 10.14). The Project Manager has estimated the number of services to be renewed, and these are shown on the drawings. The Contractor shall include the cost of these service renewals in the base bid. Unit prices are included in the **BIDDER'S PROPOSAL** form for changing quantities from the estimated number of services to be renewed.

#### 10.12 Transfer Service

Transferring a service is defined to include installing a length of service line, as require, to reconnect an existing copper service to the existing main or new main, and shall include, but is not limited to, the following: excavation; boring or jacking of copper tubing or pipe; installing corporation stop (corporation cock); tapping saddle or tapping sleeve and gate valve at the main; installing all tubing and/or pipe and all associated fittings; and backfilling and restoring of all surfaces. When a lead or galvanized tail pipe is encountered, the tail pipe from the angle coupling to the property line or joint where the tail pipe connects to the customer

service line (whichever is shorter) shall be replaced with a copper service line. Excavation, backfilling, and restoring of surfaces shall be done in accordance with "Service Excavation At main" (Section 10.14). The Project Manager has estimated the number of services to be transferred, and these are shown on the drawings. The Contractor shall include the cost of these service transferrals in the base bid. Unit prices are included in the **BIDDER'S PROPOSAL** form for changing quantities from the estimated number of services to be transferred.

#### 10.13 Discontinue Service

Discontinuing a service is defined to include excavating a service line at a water main that is to remain active, turning off the corporation stop (ferrule), disconnecting and plugging the service line, backfill the meter vault, and restoring all surfaces. Driven ferrules, which are not threaded onto the main, will require removal, plugging, and banding. Driven ferrules can be expected on most lead services. Excavating, backfilling, and restoring of surfaces shall be done in accordance with "Service Excavation At Main" (Section 10.14). Abandoning the old meter vaults shall be done in accordance with "Backfill Meter Vault" (Section 10.15). The Project Manager has estimated the number of services to be discontinued, and these are shown on the drawings. The Contractor shall include the cost of these service discontinues in the base bid. Unit prices are included in the **BIDDER'S PROPOSAL** form for changing quantities from the estimated number of services to be discontinued.

Service vaults abandoned as a result of abandoning an existing main shall be site-restored by the Contractor as required in (Section 10.15) "Backfill Meter Vault."

#### 10.14 Service Excavation at Main

The excavation at the water main shall be made in accordance with "RESTORATION" (Section 11), "Twelve-Inch Cutback Requirement" (Section 5.4.2), and "Trenching" (Section 5.5) as appropriate to the type of surface. Backfilling and restoration shall be in accordance with "BACKFILLING PROCEDURES AND TAMPING" (Section 7) and "RESTORATION" (Section 11) as appropriate to the type of surface. Contractor shall be responsible for all remedial work due to service excavations as required in the section "WARRANTY" (Section 12).

#### 10.15 Backfill Meter Vault

Meter vaults on all discontinued or relocated services shall be abandoned by removing the old meter, cast iron frame and lid, and any existing curb stop lids, and filling the void to existing grade with backfill and surface material, appropriate to the type surface. Unpaved areas shall be backfilled to grade with topsoil and restored in accordance with "RESTORATION" (Section 11). Sidewalks shall be backfilled with pit run sand or DGA, and repaved in accordance with "RESTORATION" (Section 11). Parking lots, driveways, and other areas subject to vehicular traffic shall be backfilled using DGA, and restored in accordance with "BACKFILLING PROCEDURES AND TAMPING" (Section 7), "Twelve-Inch Cutback Requirement" (Section 5.4.2), and "RESTORATION" (Section 11) found in this specification. All meters and cast iron frames and lids shall be returned to the Allmond Avenue warehouse. Contractor shall be responsible for all remedial work due to discontinuation of meter vaults as required in the section "WARRANTY" (Section 12).

#### 10.16 Service Work Costs

The Contractor shall include in his/her proposal the cost of performing all service line work as shown on the drawings and as stated in the specifications. The Company has estimated the number of services to be transferred, renewed, relocated, and discontinued, the costs of which are to be included in the base bid. The Company has made every effort to accurately estimate the number of service renewals, transferrals, relocations, and discontinues, but has included in the **BIDDER'S PROPOSAL** form unit prices for each in the event that actual numbers deviate from the estimate. No extra will be paid for transferring, renewing, relocating, or discontinuing the number of estimated services, the costs of which are to be included in the base bid.

#### 10.17 Potential Shock Hazard

Due to electrical grounding of some electrical services to metal water service lines, the potential for electrically charged water service lines and/or water meters exists. The Contractor shall check each service for electric potential before working on the service. Any electrically-charged water service shall immediately be brought to the attention of the Project Manager or his/her representative.

#### 10.18 Cutting Lead Pipe

When the cutting of pipe made of lead is required, the pipe shall be cut with a shear device, such as Reed Rathcher Shears or similar device, as approved by the Project Manager. Sawing of lead pipe shall not be allowed. All lead filings shall be removed from the interior of the pipe before it is connected. "Lead Service Renewal" notices shall be supplied

by the Company and distributed by the Contractor to all properties in which a lead service was renewed or replaced.

## **11. RESTORATION**

### **11.1 Asphalt Materials and Construction Methods**

The composition of the bituminous concrete pavement and method of construction shall be in accordance with the Kentucky Transportation Cabinet Department of Highways (KTCDOH) Standard Specifications for Road and Bridge Construction (latest edition). A copy of these specifications is on file at the Louisville Water Company's Third Street Office, Engineering Department.

All joint sealant material shall be: hot-applied, non-water-based, and produced by a competent and reputable manufacturer. Store-bought items shall not be allowed. Sand shall be placed to prevent tracking.

### **11.2 Concrete Materials and Construction Methods**

All concrete used on this project and as shown on the plans shall have a 28-day minimum compression strength of 3,500 pounds per square inch. The proportions and construction requirements for the concrete shall be as listed in the Kentucky Transportation Cabinet Department of Highways Standard Specifications for Road and Bridge Construction (latest edition). A copy of these specifications is on file at the Louisville Water Company's Third Street Office, Engineering Department.

All concrete used for structural purposes (such as thrusts blocks, road subbase, sidewalks, etc.) shall be produced by a competent and reputable manufacturer. Only concrete used for miscellaneous purposes (such as vault floor pad, end plugs for mains to be abandoned-in-place, etc.) is allowed to be that of an on-site bag mix.

### **11.3 Paved Surfaces**

Repaving over the completed trench shall be done by the Contractor, who shall furnish all materials required. Repaving shall match the original paving in type, shall be first class in all respects, and shall comply with specifications covering the type of paving to be restored as issued by the City Engineer, County Engineer, or the Kentucky Transportation Cabinet Department of Highways, whichever has authority over the thoroughfare involved. The restoration of parking lots and driveways serving commercial and/or public establishments shall comply with the specifications of the respective authority having jurisdiction over the abutting right-of-way. Except for parking lots, driveways, and sidewalks,

each individual pavement restoration shall have a Company-supplied pavement marker installed by the Contractor. The Contractor shall be responsible for all remedial work as required in (Section 12) "WARRANTY."

All materials and methods of construction shall be in accordance with "Asphalt Materials and Construction Methods" (Section 11.1) and "Concrete Materials and Construction Methods" (Section 11.2).

All bituminous pavement cuts are to be restored in accordance with the permanent pavement restoration detail as shown in the Appendix of Drawings. Pavement cuts are to be uniform width and straight sawed edges. An approved joint sealer is to be used to seal all joints between new and existing pavement. In the event asphalt plants have closed for the season, the Contractor shall maintain all pavement cuts with temporary bituminous pavement, until it becomes possible to permanently restore the pavement. Bituminous concrete used for permanent pavement restoration shall have a minimum temperature of 225°F as measured when discharging from the truck.

All cuts in driveways and sidewalks are to be replaced from construction joint to construction joint, using 3500 psi concrete. When a section of sidewalk at a street intersection is to be replaced in the City of Louisville, a wheel chair ramp is to be installed in accordance with the Appendix of Drawings.

All concrete curbs or curb and gutter which are damaged are to be entirely removed and replaced in kind between existing joints. Install one-half inch, pre-molded expansion joint material between new and existing concrete. Concrete shall be 3500 psi concrete.

Permanent restoration of driveway, sidewalks, and street intersections shall be completed by the Contractor within ten working days after backfilling of trench is complete. If restorations not completed, the Company may, at its option, have the repairs made by others and deduct those costs from the amount owed to the Contractor.

The Contractor is to take whatever measures are necessary to keep all traveled surfaces free of dirt, mud, or other material during all non-working hours. Unless otherwise approved by the Project Manager, no excavated material shall be placed on the paved surface or any other areas near the trench; the excavated material shall be placed directly from the trench to the haul truck. The Contractor shall provide adequate dust control.

Particular care is to be taken that existing pavement surfaces within the

right-of-way are not scarred or otherwise damaged by equipment. Planking or other protective devices are to be used at all times to prevent damage to paved surfaces from tracked equipment. In the event the paved surfaces damaged by work on this project, resurfacing is to be required as follows:

1) If scarring or other damage is continuous, resurfacing is to be likewise continuous, and is to consist of 1-1/2 inch Class A bituminous surfaces extending to the edge of damaged lane. The edge of the damaged pavement shall be edge keyed, with the resurfaced section being flush with the undisturbed adjacent pavement surface, allowing roadway surface drainage not to be obstructed.

2) If scarring or other damage is determined to be intermittent, individual or paved patches may be permitted, and are likewise to consist of Class A bituminous surface, extending to the edge of the damaged lane.

#### 11.4 Unpaved Surfaces

All drainage structures (such as pipe, head or wing walls, channels, flumes, and culverts), fences, signs, etc., public or private, which are damaged or removed by this Contractor, shall be repaired or replaced to the satisfaction of the owner. All open ditches shall be restored to their present cross sections, depths, and slopes, and dressed and graded to provide permanent adequate drainage to present connecting ditches or culverts equal to the original drainage systems except where specifically indicated on the plans. The Contractor shall maintain fences during construction.

The Contractor shall replace all surface material including landscaping, shrubbery, fences, or other disturbed surfaces, to a condition at least equal to that before the work began, furnishing all labor and materials.

The grassed area disturbed by the work under this contract, whether by the Contractor or by any subcontractor, within or adjacent to the right-of-way of any state, county, city or other thoroughfare, public or private (except as required below), now in grass shall be shaped, seeded, and mulched in accordance with KTCDOH Standard Specifications for Road and Bridge Construction (latest edition). Seed mixture shall be Mixture No. 1 as described in Seed Mixtures for Permanent Seeding. Acceptance of Seeding Section shall be amended to disallow compensations for any corrective seeding required by the Project Manager.

All work fronting residential lots now in grass shall be shaped and sodded in accordance with KTCDOH Standard Specifications for Road and Bridge Construction (latest edition), but shall be amended to include

removal of all rock from the sod bed. Rolling of the installed sod will be allowed in lieu of tamping.

#### 11.5 Site Clean Up

Surplus pipeline materials, equipment, tools, and temporary structures shall be removed by the Contractor, and all dirt, rubbish and excess earth from excavations shall be hauled and disposed by the Contractor, all in a manner satisfactory to the Company.

The Contractor shall leave the site in presentable shape at least comparable with the condition in which it was before the construction began and in compliance with all restoration provisions of this specification.

### 12. WARRANTY

#### 12.1 Pipeline Materials and Appurtenances

The Contractor shall be responsible for satisfactory performance of the pipeline and appurtenances for a period of one (1) year after the date of the final contract payment.

#### 12.2 Paved Surface Restoration

When in paved surfaces, the Contractor shall be responsible for all settlement, surface restoration, and any other maintenance or repairs required due to water facilities construction for a period of five (5) years after the date of the final contract payment. The Performance Bond, if required, shall include coverage of this requirement for the first two (2) years, and the Contractor shall provide a warranty for the remaining three (3) years. If a Performance Bond is not required, the Contractor shall provide a warranty for the full five (5) years.

#### 12.3 Unpaved Surface Restoration

When in unpaved surfaces, the Contractor shall be responsible for all settlement, surface restoration, and any other maintenance or repairs required due to water facilities construction for a period of two (2) years after the date of the final contract payment. The Performance Bond, if required, shall include coverage of this requirement for two (2) years. If a Performance Bond is not required, the Contractor shall provide a warranty for the full two (2) years.

#### 12.4 Performance of Warranty

If the Contractor does not complete repairs within two (2) weeks after written notification to the Contractor and bonding company, the Company may have the repairs completed by others, the cost of which will be billed to the Contractor.